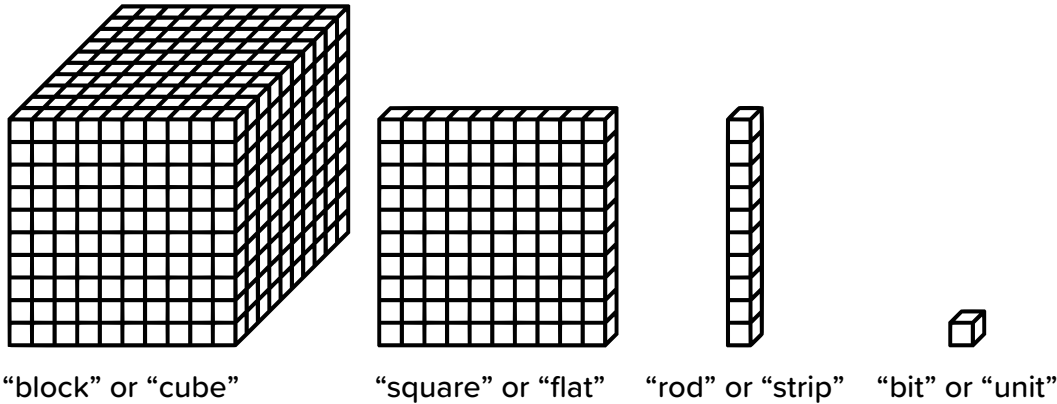# Unit 1 Assessment
Place Value

Name _____   **Date** _____

Instructions: Write or circle your answers.

1. Ahmed and Omar are using three-dimensional Base Ten blocks on their place value mats to build whole numbers.

"block" or "cube"   "square" or "flat"   "rod" or "strip"   "bit" or "unit"

Ahmed built the number 238 using 3 Tens rods.
Omar built the number 302 using 3 Tens rods.

Ahmed thinks that the 3 in his number has a greater value than the 3 in Omar's number, but Omar disagrees.

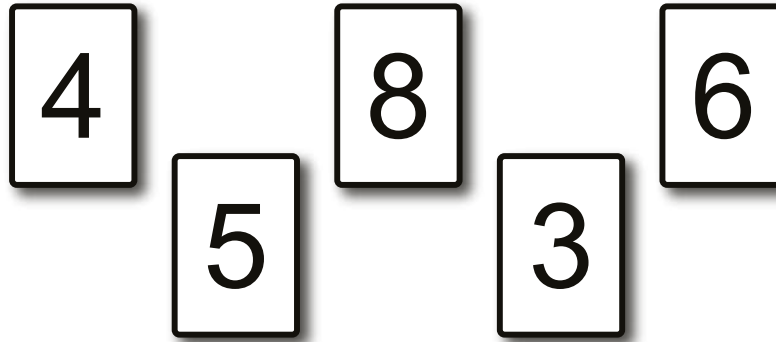Which statement best describes who is correct and why?

   A. Omar is correct because the value of 3 flats is 300 and the value of 3 rods is 30.

   B. Ahmed is correct because the value of 3 rods is 30 and the value of 3 flats 3.

   C. Omar is correct because the value of 3 flats is 30 and the value of 3 rods is 3.

   D. Ahmed is correct because the value of 3 rods is 300 and the value of 3 flats is 30.

2. Consider the numeral 789,403. What is the place value of the digit 8?

   A. Hundreds

   B. Thousands

   C. Ten Thousands

   D. Hundred Thousands

Name _____ **Date** _____

3. Marwa has five tiles, each containing a different digit, as shown.

```
  4           8           6
      5           3
```

Marwa can arrange the five tiles to create different five-digit numbers where the digit on each tile is used exactly once.

What five-digit number can Marwa create using the tiles that will have the greatest value?

_____

4. Consider the numeral 5,6<u>2</u>8.

Which *two* statements identify a number where the value of the underlined digit changed to be ten times smaller than in 5,628 and correctly describe the reason for the change in value.
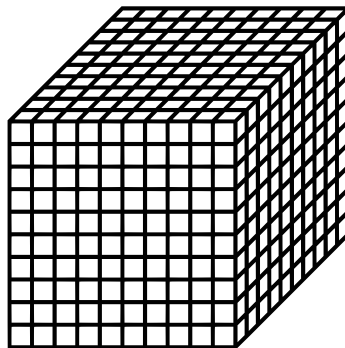
A. 2,586, because moving a digit two places to the left makes its value ten times smaller.

B. 6,285, because moving a digit one pace to the left the value makes its value ten times smaller.

C. 8,652 because moving a digit one place to the right makes its value ten times smaller.

D. 8,265, because moving a digit one pace to the left makes its value ten times smaller.

E. 6,582, because moving a digit one place to the right makes its value ten times smaller.

F. 2,658, because moving a digit two places to the left makes its value ten times smaller.

Unit 1 Assessment
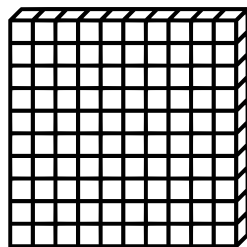## Place Value

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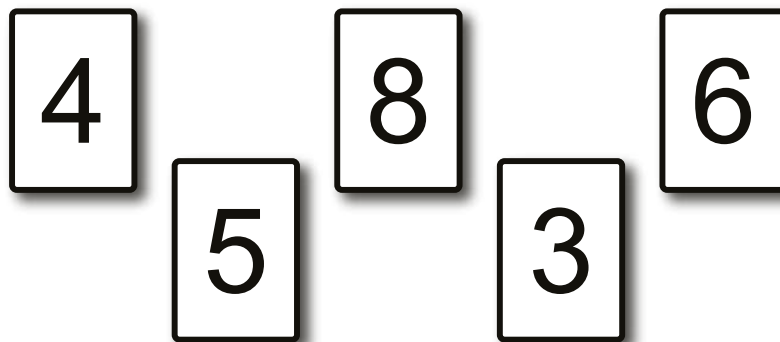Which statement best describes who is correct and why?

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Unit 1 Assessment
Place Value

Name _____ **Date** _____

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4   8   6
  5   3

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_____

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   F. 2,658, because moving a digit two places to the left makes its value ten times smaller.

Name _____   **Date** _____

5. Mariam's school raised 6,400 LE for charity last year. If they want to raise ten times more money next year, how much money would they need to raise?

    A. 64 LE

    B. 640 LE

    C. 64,000 LE

    D. 640,000 LE

6. Hashem created Base Ten blocks to model a value as shown.
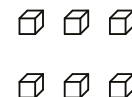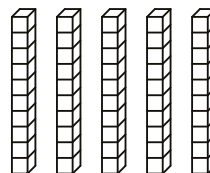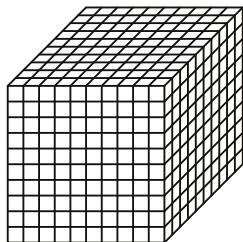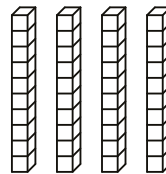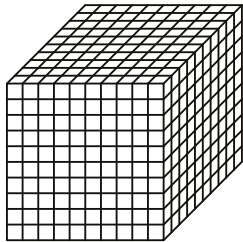
| Thousands | Hundreds | Tens | Ones |

Which numeral represents the same value as Hashem's model?

    A. 296

    B. 2,096

    C. 20,096

    D. 20,906

Unit 1 Assessment
Place Value

Name _____ **Date** _____

7. What is the correct way to write the numeral 37,103 in word form?

    A. thirty-seven one hundred three

    B. thirty-seven thousand, one hundred three

    C. thirty-seven ten thousand, one hundred three

    D. thirty-seven ten thousand, thirteen

8. Which expression shows 2,081,904 written in expanded form?

    A. 200,000 + 80,000 + 1,000 + 900 + 4

    B. 2,000,000 + 80,000 + 1,000 + 900 + 4

    C. 200,000 + 80,000 + 10,000 + 900 + 4

    D. 2,000,000 + 800,000 + 10,000 + 900 + 4

9. Fill in the blanks in the sentences that follow with the correct answer choice from each group. Heba believes that the numeral 2,038 represents the same value as the Base Ten blocks shown.
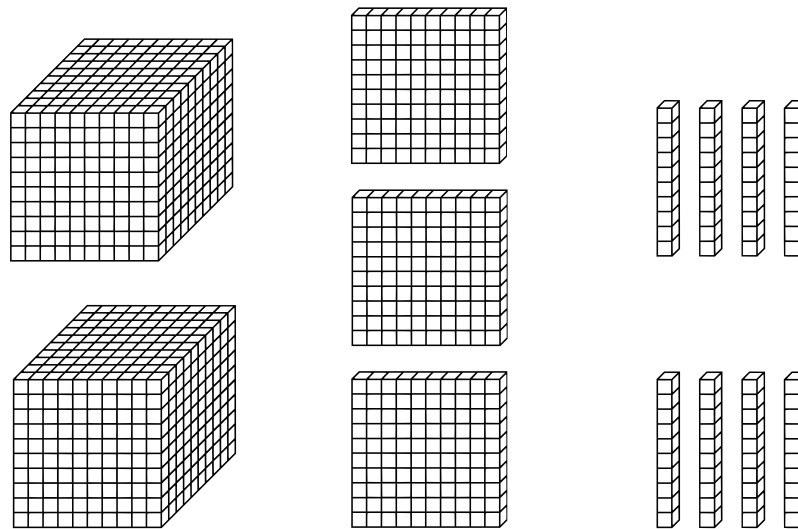
| **Thousands** | **Hundreds** | **Tens** | **Ones** |

Unit 1 Assessment
Place Value

Name _____   **Date** _____

Heba is **A.** _____, because the 2 cubes represent

B. _____, the 3 flats represent **C.** _____, and the

8 rods represent **D.** _____. So, the correct numeral is

E. _____.

A.
correct
incorrect

B.
200
2000

C.
300
30

D.
80
8

E.
238
2,038
2,308
2,380

10. Which expression decomposes the numeral 90,789 in expanded form?

    A. 90,000 + 7,000 + 800 + 9

    B. 90,000 + 7,000 + 80 + 9

    C. 90,000 + 700 + 80 + 9

    D. 9,000 + 700 + 80 + 9

11. Last week the distribution center shipped 15,807 boxes of paper to offices across the country. This week, they shipped 15,780 boxes of paper.

Which statement correctly relates the number of boxes shipped this week to the number of boxes shipped last week?

    A. 15,807 < 15,780

    B. 15,780 = 15,807

    C. 15,780 > 15,807

    D. 15,807 > 15,780

Name _____ **Date** _____

12. Yazeed's farm has three hundred twenty-four thousand, two hundred seven sheep. Hamed's farm has three hundred two thousand, four hundred seven sheep.

Which statement below correctly relates the number of sheep on Yazeed's farm to the number of sheep on Hamed's farm?

    A. 302,407 > 324,207

    B. 324,207 < 302,407

    C. 302,407 = 324,207

    D. 324,207 > 302,407

13. Nada and Fatma want to know which town has more people.

- Town A has four million, eighty-six thousand, five hundred eighty-two people.

- Town B has 968,732 people.

Which *two* statements correctly relate the number of people in Town A to the number of people in Town B?

    A. Nine hundred sixty-eight thousand, seven hundred thirty-two < 4,086,582

    B. 4,000,000 + 80,000 + 6,000 + 500 + 80 + 2 < 900,000 + 60,000 + 8,000 + 700 + 30 + 2

    C. Nine hundred sixty-eight thousand, seven hundred thirty-two > 4,000,000 + 80,000 + 6,000 + 500 + 80 + 2

    D. 900,000 + 60,000 + 8,000 + 700 + 30 + 2 > four million, eighty-six thousand, five hundred eighty-two

    E. 4,000,000 + 80,000 + 6,000 + 500 + 80 + 2 > 968,732

    F. 4,086,582 < 900,000 + 60,000 + 8,000 + 700 + 30 + 2

Unit 1 Assessment
Place Value

Name _____   **Date** _____

14. Fill in the blanks below with the correct answer choice from each group.

Omar conducted an experiment and organized the data in the table shown.

Experiment Results
200 + 9
270
702
700 + 80 + 9
878
800 + 20 + 9

I know Omar did not list the numbers in ascending order because the

A. _____ number, **B.** _____ ,

is incorrectly placed in the list.

A.

Greatest
Smallest

B.

702
878
270
789
290
987

Unit 1 Assessment
Place Value

Name _____ **Date** _____

15. Which table correctly lists the numbers in descending order?

A.

953
900 + 30
five hundred ninety-three
539
five hundred thirty

B.

593
500 + 30 + 9
five hundred thirty
900 + 30
nine hundred fifty-three

C.

five hundred ninety-three
539
500 + 30
953
nine hundred thirty

D.

nine hundred fifty-three
900 + 30
539
five hundred ninety-three
five hundred thirty

Name _____   **Date** _____

16. Aya must round the number 521,789 to the Thousands place.

What number should she write?

    A. 520,000, because the digit in the Thousands place is less than 5 so that place and all the digits to the right should be changed to zero.

    B. 521,000, because the digit in the Thousands place is less than 5 so all the digits to the right of that place should be changed to zero.

    C. 522,000, because the digit in the Hundreds place is 5 or greater, so the digit in the Thousands place should be increased by 1.

    D. 521,800, because the digit to the right of the Thousands place is 5 or greater, so the digit in that place should be increased by 1.

17. Mona is practicing rounding. Which *two* statements round the number to the underlined place value correctly?

    A. 2,6<u>0</u>7,439 ➝ 2,6000,000

    B. 2,607,<u>4</u>39 ➝ 2,607,000

    C. 2,607,<u>4</u>39 ➝ 2,607,430

    D. 2,607,4<u>3</u>9 ➝ 2,607,440

    E. 2,<u>6</u>07,439 ➝ 3,000,000

    F. <u>2</u>,607,439 ➝ 3,000,000

Name _____   **Date** _____

18. Nour is meeting his cousin at the movie theater. To get to the theater, Nour must wait 13 minutes for the bus, travel 29 minutes on the bus, and then walk 15 minutes to the theater.

    Using mid-point rounding, which is the *best* estimate of how long it will take Nour to meet his cousin?

    A. 40 minutes

    B. 50 minutes

    C. 60 minutes

    D. 70 minutes

19. Fill in the blanks below with the correct answer choice from each group.

    Rawan wanted to buy a photo album big enough to hold all her pictures from last year. She was not sure what size to buy, so she created the table below showing how she used front-end estimation to estimate how many pictures she has in all.

Season	Actual Number of Pictures	Estimated Number of Pictures
Spring	272	300
Summer	296	300
Autumn	214	200
Winter	350	400

Name _____ **Date** _____

Did Rawan use front-end estimation correctly?

Rawan **A.** _____ used front-end estimation.

Front-end estimation uses the digit **B.** _____

and then makes the digits in the **C.** _____.

A.
incorrectly
correctly

B.
in the smallest place
in the largest place
to the right of the largest place
to the left of the smallest place

C.
rest of the places five
rest of the places zero
ones place zero
tens place five

20. Rashad is shopping at the mall. He wants to buy a t-shirt for 39 LE and a hat for 15 LE. Use front-end estimation to estimate how much money Rashad will be spending if he buys both items.

_____

Unit 1 Assessment Answer Key

1. **A.** The student chose the correct answer.
   B. The student misinterpreted the value of flats as 1.
   C. The student misinterpreted the value of flats as 10 and rods as 1.
   D. The student switched the values of rods and flats.

2. **A.** The student chose the place value of the digit two places to the right of the given digit.
   B. The student chose the place value of the place to the right of the given digit.
   C. The student chose the correct answer.
   D. The student chose the place value of the digit to the left of the given digit.

3. 86,543 or 86543

4. **A.** The student moved the digit two places because the Tens place is the second place in a numeral and believed moving a digit left made its value less.
   B. The student confused the impact of moving a digit left and moving it right.
   C. The student chose a correct answer.
   D. The student confused the impact of moving a digit left and moving it right.
   E. The student chose a correct answer.
   F. The student moved the digit two places because the Tens place is the second place in a numeral and believed moving a digit left made its value less.

5. **A.** The student believed moving digits two places to the right made their values ten times greater.
   B. The student believed moving digits one place to the right made their values ten times greater.
   C. The student chose the correct answer.
   D. The student believed moving digits two places to the left made their values ten times greater.

6. **A.** The student thought cubes represented the Hundreds place instead of the Thousands place.
   B. The student chose the correct answer.
   C. The student thought cubes represented the Ten Thousands place instead of the Thousands place.
   D. The student thought cubes represented Ten Thousands place instead of Thousands, and rods represented Hundreds place instead of Tens place.

7. **A.** The student did not include the name of the Thousands period.
   B. The student chose the correct answer.
   C. The student included the place value of the digit in the largest place.
   D. The student represented 103 as ten and three and used the name for that sum.

8. **A.** The student wrote two hundred thousand instead of two million.
   B. The student chose the correct answer.
   C. The student wrote two hundred thousand instead of two million and ten thousand instead of one thousand.
   D. The student wrote eight hundred thousand instead of eighty thousand and ten thousand instead of one thousand.

9. Heba is incorrect, because the 2 cubes represent 2000, the 3 flats represent 300, and the 8 rods represent 80. So, the correct numeral is 2,380.

10. **A.** The student incorrectly wrote the digit in the Hundreds place as a digit in the Thousands place, and the digit in the Tens place as a digit in the Hundreds place.
    B. The student incorrectly wrote the digit in the Hundreds place as a digit in the Thousands place.
    C. The student chose a correct answer.
    D. The student incorrectly wrote the digit in the Ten Thousands place as a digit in the Thousands place.

Unit 1 Assessment Answer Key

11. A. The student does not understand the comparison symbols, or does not understand how to compare whole numbers.
  B. The student may have only compared the first two places on the left, the Ten Thousands and Thousands.
  C. The student may have compared the first two places on the right, the Tens and Ones.
  D. The student chose the correct answer.

12. A. The student only compared the digits in the rightmost period and believed the number of sheep in Yazeed's farm must come second.
  B. The student only compared the digits in the rightmost period and believed the number of sheep in Yazeed's farm must come first.
  C. The student only compared the digits in the Hundred Thousands and Ones places.
  D. The student chose the correct answer.

13. A. The student chose a correct answer.
  B. The student only compared the rightmost periods or only compared the digits in the greatest place.
  C. The student only compared the rightmost periods or only compared the digits in the greatest place
  D. The student only compared the rightmost periods or only compared the digits in the greatest place.
  E. The student chose a correct answer.
  F. The student only compared the rightmost periods or only compared the digits in the greatest place.

14. I know Omar did not list the numbers in ascending order because the greatest number, 878, is incorrectly placed in the list.

15. A. The student chose the correct answer.
  B. The student misidentified the value of one or more numbers.
  C. The student ordered the Tens place in descending order, but ordered the Hundreds place in ascending order.
  D. The student ordered most of the numbers in descending order, but made an error.

16. A. The student used the incorrect place to determine whether to round up or down and changed the wrong digits.
  B. The student referred to the digit in the thousands place instead of the place before the thousands place.
  C. The student chose the correct answer.
  D. The student used the correct place to determine whether to round up or down but changed the wrong digits.

17. A. The student rounded to the Hundred Thousands
  B. The student rounded to the Thousands place instead of the Hundreds place.
  C. The student rounded to the Tens place instead of the Hundreds place and made an error when rounding.
  D. The student chose the correct answer.
  E. The student rounded to the Millions place instead of the Hundred Thousands place.
  F. The student chose the correct answer.

18. A. The student did not apply the rules of mid-point rounding correctly, and used front-end estimation instead.
  B. The student did not apply the rules of rounding correctly, and rounded the number with a 5 in the Ones place down instead of up.
  C. The student chose the correct answer.
  D. The student did not apply the rules of rounding correctly and rounded all the numbers up instead of rounding 13 down.

19. Rawan incorrectly used front-end estimation. Front-end estimation uses the digit in the largest place and then makes the digits in the rest of the places zero.

20. 40 LE

Unit 2 Assessment
Addition and Subtraction Strategies

Name _____ **Date** _____

Instructions: Write or circle your answers.

1. Fill in the blanks below with the correct answer choice from each group.

Additive Identity	Associative	Commutative

   Jamal wrote (14 + 6) + 21 = 14 + (6 + 21) using the

   _____ Property of Addition.

   He wrote 33 + 16 = 16 + 33 using the _____

   Property of Addition. He wrote 28 + 0 = 28 using the

   _____ Property of Addition.

2. Fill in the blanks below with the correct answer choice from each group.
   How can 528 + 316 be rewritten? Explain how you know.

   The expression can be rewritten as **A.** _____

   because the Commutative Property of **B.** _____

   states that the numbers can be **C.** _____

   _____.

   A.

528 + 316 + 0
316 + 528
5(28) + 3(16)

   B.

addition
multiplication
subtraction

   C.

added to zero without changing the sum
grouped in any way without changing the sum
added in any order without changing the sum

Unit 2 Assessment
Addition and Subtraction Strategies

Name _____   **Date** _____

3. A student writes the statement 87 − 52 = 52 − 87. Why is this statement incorrect?

  A. The Associative Property applies to addition but not subtraction.

  B. The Commutative Property applies to addition but not subtraction.

  C. The Associative Property applies to subtraction but not addition.

  D. The Commutative Property applies to subtraction but not addition.

4. Which of these strategies would *best* help you find 25 + 78 using mental math? Select *two* correct answers.

  A. Round to 30 and 80, then add.

  B. Round to 30 and 80, then subtract.

  C. Use compensation by adding 25 and 75, then adding 3.

  D. Use compensation by adding 25 and 75, then subtracting 3.

  E. Use break up and bridge by breaking up 25 into 2 and 5 and breaking up 78 into 7 and 8. Add 2 + 7 and 5 + 8. Then add 9 + 13.

  F. Use break up and bridge by breaking up 25 into 20 and 5 and breaking up 78 into 70 and 8. Add 20 + 70 and 5 + 8. Then add 90 + 13.

Unit 2 Assessment
Addition and Subtraction Strategies

Name _____   **Date** _____

5. Fill in the blanks below with the correct answer choice from each group.

How can 160 − 69 be found using the compensation strategy?

Subtract **A.** _____ then add **B.** _____ to find

that 160 − 69 equals **C.** _____.

A.

160 − 60
160 − 70
200 − 60
200 − 70

B.

1
40
30
9

C.

91
99
101
109

6. Find the sum.   469
                      +252
                      ‾‾‾‾‾

    A. 217

    B. 218

    C. 711

    D. 721

7. Mohab found that 29,828 + 41,309 = 71,137. Which estimate could he use to check if his answer is reasonable?

    A. 30,000 + 50,000 = 80,000

    B. 20,000 + 50,000 = 70,000

    C. 30,000 + 40,000 = 70,000

    D. 20,000 + 40,000 = 60,000

Unit 2 Assessment
Addition and Subtraction Strategies

Name _____   **Date** _____

8. Find the difference.   469
$$-\ 252$$

    A. 176

    B. 186

    C. 178

    D. 612

9. Shaimaa solves this problem. What is her next step?   252
$$\begin{array}{r} -\ 86 \\ \hline 6 \end{array}$$

    A. Regroup the Tens place and subtract 8 Tens from 14 Tens.

    B. Regroup the Tens place and subtract 8 Tens from 15 Tens.

    C. Subtract 8 Hundreds from 2 Hundreds.

    D. Subtract 0 Hundreds from 2 Hundreds.

10. Dalia solved the following problem.   6,219
$$\begin{array}{r} -\ 2{,}858 \\ \hline 3{,}361 \end{array}$$

Then she checked if her answer was reasonable by estimating.
She said that her answer is not reasonable because her estimate is
6,000 − 2,000 = 4,000.

What did Dalia do wrong?

    A. Dalia did not regroup correctly when subtracting. The difference should have been 3,461.

    B. Dalia did not round 2,858 correctly. Her estimate should be 6,000 − 3,000 = 3,000.

    C. Dalia did not round 6,219 correctly. Her estimate should be 7,000 − 2,000 = 5,000.

    D. Dalia did not do anything wrong. Her estimate is close enough to the answer.

Name _____   **Date** _____

11. A seamstress had a 21-meter bolt of cloth. She used some of the cloth to make a dress and had 15 meters left over. Let *c* represent the amount of cloth. Which equation represents this problem?

    A. $15 - c = 21$

    B. $21 - c = 15$

    C. $15 + c = 21$

    D. $21 + c = 15$

12. A train leaves the station with 680 passengers. It picks up more passengers at the next station. The train then has 800 passengers on it. Let *p* represent the number of passengers. Which bar model represents this problem?

A.

p	
680	800

B.

p	
800	680

C.

680	
800	*p*

D.

800	
680	*p*

Unit 2 Assessment
Addition and Subtraction Strategies

Name _____ **Date** _____

13. Fill in the blanks below with the correct answer choice.

A restaurant buys 125 kilograms of rice. It uses 32 kilograms of rice on Monday and 46 kilograms of rice on Tuesday. Use a bar model to figure out how much rice is left.

32	46	

32	46	47	125

14. What is the value of x? $111 + x = 481$

- **A.** 260
- **B.** 370
- **C.** 471
- **D.** 592

15. An amusement park admitted 852 visitors in the morning. After some people left for lunch, the park had 629 visitors left. How many people left for lunch?

_____

16. A ship entered port with 611 tonnes of cargo. It picked up a 25-tonne shipment of fresh fruit and a 149-tonne shipment of electronics before it left port. How much cargo did the ship leave port with?

- **A.** 437 tonnes
- **B.** 636 tonnes
- **C.** 760 tonnes
- **D.** 785 tonnes

Unit 2 Assessment
Addition and Subtraction Strategies

Name _____   **Date** _____

17. A water truck was filled with 4,000 liters of water. It delivered 1,250 liters
    to its first client. It delivered 620 liters to its second client. It delivered
    2,120 liters to its last client. How much water was left in the truck?

    A. 10 liters

    B. 50 liters

    C. 2,130 liters

    D. 7,990 liters

18. Fill in the blanks below with the correct answer choice from each group.

    Nadia is hiking on a hilly trail. She climbs up 26 meters and stops to take
    some pictures. From there, she climbs up another 162 meters to reach the
    top of the hill. Then she begins to walk back down the hill but decides to
    stop and have lunch. She has 45 meters left to go to get to the bottom
    of the hill after she is done with lunch. How can you find out how many
    meters Nadia walked down the hill before she had lunch?

    Let w equal the number of meters Nadia walked down the hill before she

    had lunch. Solve the equation **A.** _____ to

    find that **B.** _____.

    A.

$26 + 162 - 45 = w$
$26 - 162 - 45 = w$
$26 + 162 - w = 45$
$26 - 162 - w = 45$

    B.

$w = 91$
$w = 143$
$w = 181$
$w = 233$

Name _____ **Date** _____

19. A coffee pot held 1,425 milliliters of coffee. Rana filled her mug with 730 milliliters of coffee from the pot. Then she poured 460 milliliters for her friend. How can you find out how much coffee was left in the pot? Select *two* correct answers.

   A. Add the 730 milliliters Rana poured in her mug to the 1,425 total milliliters that were in the coffee pot to begin with. Then subtract the 460 milliliters Rana poured in her friend's mug.

   B. Subtract the 730 milliliters Rana poured in her mug from the 1,425 milliliters that were in the coffee pot to begin with. Then subtract the 460 milliliters Rana poured in her friend's mug.

   C. Add the 460 milliliters Rana poured in her friend's mug to the 1,425 total milliliters that were in the coffee pot to begin with. Then subtract the 730 milliliters Rana poured in her mug.

   D. Subtract the 460 milliliters Rana poured in her friend's mug from the 1,425 total milliliters that were in the coffee pot to begin with. Then subtract the 730 milliliters Rana poured in her mug.

   E. Add the 730 milliliters Rana poured in her mug to the 1,425 total milliliters that were in the coffee pot to begin with. Then add the 460 milliliters Rana poured in her friend's mug.

   F. Add the 460 milliliters Rana poured in her friend's mug to the 1,425 total milliliters that were in the coffee pot to begin with. Then add the 730 milliliters Rana poured in her mug.

Unit 2 Assessment
Addition and Subtraction Strategies

Name _____ **Date** _____

20. Fill in the blanks below with the correct answer choice from each group.

A library had 5,821 books in its collection at the beginning of the week. Throughout the week, people checked out 1,527 books and returned an unknown number of books. At the end of the week, there were 5,507 books in the library's collection. Let b be the number of books people returned. Explain how to find how many books were returned.

First, **A.** _____ 5,821. Then

B. _____ to find that people returned

C. _____ books throughout the week.

A.

add 1,527 to
subtract 1,527 from
add 5,507 to
subtract 5,507 from

B.

add to 1,527
subtract from 1,527
add to 5,507
subtract from 5,507

C.

add to 1,527
subtract from 1,527
add to 5,507
subtract from 5,507

Unit 2 Assessment Answer Key

1. Jamal wrote (14 + 6) + 21 = 14 + (6 + 21) using the Associative Property of Addition.

He wrote 33 + 16 = 16 + 33 using the Commutative Property of Addition.

He wrote 28 + 0 = 28 using the Additive Identity Property of Addition.

2. The expression can be rewritten as 316 + 528 because the Commutative Property of Addition states that numbers can be added in any order without changing the sum.

3.
- **A.** The student did not identify the property illustrated in the problem.
- **B.** The student chose the correct answer.
- **C.** The student did not identify the property illustrated in the problem.
- **D.** The student did not apply the Commutative Property to the correct operation.

4.
- **A.** The student did not find an exact answer.
- **B.** The student did not find an exact answer and subtracted instead of added.
- **C.** The student chose a correct answer.
- **D.** The student did not compensate correctly for rounding down.
- **E.** The student did not use the correct place values when breaking up the addends.
- **F.** The student chose a correct answer.

5. Subtract 160 − 70 then add 1 to find that 160 − 69 equals 91.

6.
- **A.** The student subtracted instead of added.
- **B.** The student subtracted instead of added and made a subtraction error.
- **C.** The student did not correctly regroup the Tens.
- **D.** The student chose the correct answer.

7.
- **A.** The student rounded the subtrahend up instead of down.
- **B.** The student rounded the minuend down instead of up and rounded the subtrahend up instead of down.
- **C.** The student chose the correct answer.
- **D.** The student rounded the minuend down instead of up.

8.
- **A.** The student chose the correct answer.
- **B.** The student did not ungroup the Tens.
- **C.** The student incorrectly subtracted in the Ones place.
- **D.** The student added rather than subtracted.

9.
- **A.** The student chose the correct answer.
- **B.** The student did not use place value to rewrite the Hundreds as Tens.
- **C.** The student did not recognize that 8 is in the Tens place.
- **D.** The student did not finish subtracting the Tens.

10.
- **A.** The student did not correctly regroup when subtracting.
- **B.** The student chose the correct answer.
- **C.** The student did not correctly round correctly when estimating.
- **D.** The student did not find the error.

11.
- **A.** The student did not identify the correct minuend and difference.
- **B.** The student chose the correct answer.
- **C.** The student did not use the correct operation to model the problem.
- **D.** The student did not use the correct operation to model the problem.

Unit 2 Assessment Answer Key

12. A. The student said *p* is the sum of the passengers after the two stations.

B. The student said *p* is the sum of the passengers after the two stations.

C. The student added *p* to the number of passengers after it left the second station.

D. The student chose the correct answer.

13.

125		
32	46	47

14. A. The student added to isolate the variable but did not add correctly.

B. The student chose the correct answer.

C. The student did not subtract correctly.

D. The student added the known quantities.

15. 223

16. A. The student used subtraction to solve.

B. The student did not add the weight of both cargo shipments.

C. The student did not add the weight of both cargo shipments.

D. The student chose the correct answer.

17. A. The student chose the correct answer.

B. The student did not subtract correctly.

C. The student did not include the water for the truck's last client in the model.

D. The student used addition to model the problem instead of subtraction.

18. Let w equal the number of meters Nadia walked down the hill before she had lunch. Solve the equation $26 + 162 - w = 45$ to find that $w = 143$.

19. A. The student incorrectly added Rana's coffee to the total instead of subtracting it.

B. The student chose the correct answer.

C. The student incorrectly added Rana's friend's coffee instead of subtracting it.

D. The student chose the correct answer.

E. The student incorrectly added all three quantities.

F. The student incorrectly added all three quantities.

20. First, subtract 1,527 from 5,821. Then subtract from 5,507 to find that people returned 1,213 books throughout the week.

Unit 3 Assessment
Concepts of Measurement

Name _____   **Date** _____

Instructions: Write or circle your answers.

1. Kamal's class is learning about measuring units of length. At the end of the lesson, each student wrote a statement explaining how lengths are related. Which *two* student statements are correct?

    A. A meter is 10 times as long as 1 millimeter.

    B. A meter is 100 times as long as 1 centimeter.

    C. A meter is 1,000 times as long as 1 kilometer.

    D. A kilometer is 1,000 times as long as 1 meter.

    E. A kilometer is 1,000 times as long as 1 millimeter.

2. Fill in the blanks below with the correct answer choice from each group.

    A.

30
300
3,000
539
30,000

    B.

100
1,000
10,000
100,000

    Nour is comparing the weights of his cats. The first cat weighs

    3 kilograms. The second cat weighs 2,700 grams. Nour knows

    3 kilograms is the same as **A.** _____ grams,

    because there are **B.** _____ grams in 1 kilogram.

3. Fatma poured liquid into a beaker labeled with both liters and milliliters. Which observation could Fatma have made?

    A. There are 10 milliliters in 1 liter.

    B. There are 100 milliliters in 1 liter.

    C. There are 1,000 milliliters in 1 liter.

    D. There are 10,000 milliliters in 1 liter.

Unit 3 Assessment
Concepts of Measurement

Name _____ **Date** _____

4. Baher walked for 4 kilometers. Which two distances also describe how far Baher walked?

    A. 40 decimeters

    B. 400 millimeters

    C. 4,000 meters

    D. 40,000 millimeters

    E. 400,000 centimeters

5. Ahmed used a scale weighing in both kilograms and grams. As Ahmed weighed different objects, which two conclusions could he have made?

    A. Two kilograms are equivalent to 2,000 grams.

    B. Two hundred kilograms are equivalent to 20,000 grams.

    C. Twenty kilograms are equivalent to 20,000 grams.

    D. Twenty tonnes are equivalent to 2,000 grams.

    E. Two hundred tonnes are equivalent to 20,000 kilograms.

6. Zeinab poured 2 liters of milk into a mixing bowl. How many milliliters of milk did she pour?

    A. 20

    B. 200

    C. 2,000

    D. 20,000

7. Amir measures a stick that is 23 centimeters long. Then, he writes the length of the stick in millimeters. What is the place value of the number 2 in the number that Amir wrote?

    A. Tens

    B. Hundreds

    C. Thousands

    D. Ten Thousands

Unit 3 Assessment
Concepts of Measurement

Name _____ **Date** _____

8. Fill in the blanks below with the correct answer choice from each group.

   A.
more than
the same as
less than

   B.
different
the same

   C.
different
the same

   A rock with a mass of 6 kilograms and 50 grams weighs

   A. _____ a rock with a mass of 6,005 grams. The

   place values of the 6 in both weights is **B.** _____,

   and the place value of the 5 in both weights is **C.** _____.

9. Fill in the blanks below with the correct answer choice from each group.

   A.
0.045
0.45
450
45,000

   B.
multiplied by 100
multiplied by 1,000
divided by 100
divided by 1,000

   C.
A
B
C

   D.
A
B
C

   Laila has three buckets that can hold different amounts of liquid.
   Bucket A can hold 45 liters. Bucket B can hold 4,500 milliliters.
   Bucket C can hold 450,000 milliliters. Which bucket has the
   greatest capacity?

   First, convert all measures to milliliters. Bucket A holds **A.** _____

   milliliters because 45 was **B.** _____. Next,

   order the numbers. Bucket **C.** _____ has the greatest capacity.

   Bucket **D.** _____ has the least capacity.

Unit 3 Assessment
Concepts of Measurement

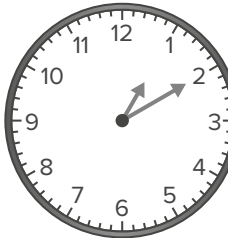**Name** _____   **Date** _____

10. Which clock shows 1:10?

A.
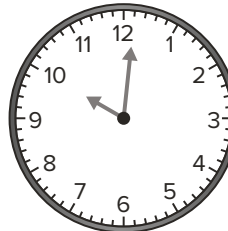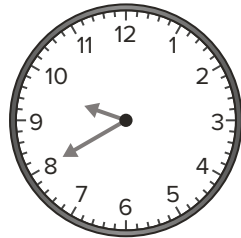

B.

C.

D.

Unit 3 Assessment
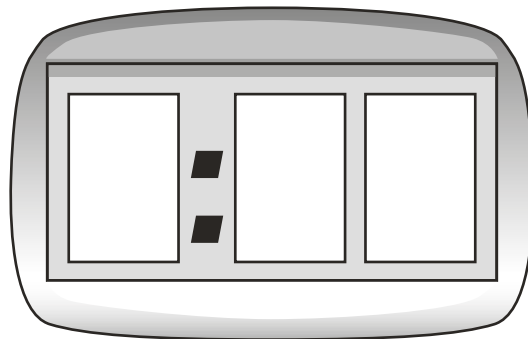## Concepts of Measurement

Name _____   **Date** _____

11. Fill in the blanks below with the correct answer choice.

Hazem plugs in a digital clock and needs to set the time. To see what time it is, he looks at another clock in the house, shown here.

8	9	10	0	4

12. Badr helped his father for 75 minutes. How can he determine the number seconds he helped?

    A. divide 75 by 24

    B. multiply 75 by 24

    C. divide 75 by 60

    D. multiply 75 by 60

Unit 3 Assessment
Concepts of Measurement

Name _____   **Date** _____

13. Fill in the blanks below with the correct answer choice from each group.

A.	**B.**	**C.**	**D.**
60	30	multiply	30
120	60	divide	60
240	120		120
400	3,600		3,600

Dalia read for 4 hours yesterday, which is the same as **A.** _____

minutes. Since there are **B.** _____ minutes in 1 hour, Dalia can

C. _____ the number of hours she read by

D. _____ to find the number of minutes.

14. Kamel wants to find the number of hours in 5 days. Which number should
Kamel multiply by 5 to find the number of hours in 5 days?

   A. 7

   B. 24

   C. 60

   D. 120

Unit 3 Assessment
Concepts of Measurement

Name _____   **Date** _____

15. Fill in the blanks below with the correct answer choice from each group.

A.

The time it takes for the pasta to cook
The time at which the pasta begins cooking
The time at which the pasta finishes cooking

B.

5:12
5:30
5:42

C.

5:12
5:30
5:42

D.

12
30

Maisa is cooking pasta. The pasta needs to cook for 12 minutes.

She starts cooking the pasta at 5:30 p.m. **A.** _____

_____ is the elapsed time.

Elapsed time is the time between the pasta's start time, **B.** _____

p.m., and its end time, **C.** _____ p.m. The elapsed time is

D. _____ minutes.

16. 14.5 hours – 7 hours = ? hours

    A. 6.5

    B. 7

    C. 7.5

    D. 21.5

17. Samira starts painting at 2:15 p.m. and finishes her painting 50 minutes later. At what time does Samira finish painting?

_____

Unit 3 Assessment
Concepts of Measurement

Name _____ **Date** _____

18. Moaaz is driving to his friend's house, which is 5 kilometers away. He has already driven 300 meters. How many meters does he still have to drive?

    A. 200

    B. 250

    C. 4,700

    D. 49,700

19. Fill in the blanks below with the correct answer choice from each group.

A.

1 + 1 = 2
2 + 1 = 3
2 + 15 = 17

B.

2
3
17

C.

15
35
40
75

Kamel wants to find how long he was away from home. Traveling to and from the library took him 40 minutes in all, and he spent 2 hours and 35 minutes in the library.

Step	Work
1. Add the minutes.	40 + 35 = 75
2. Subtract out an hour.	75 – 60 = 15
3. Add the hours.	
4. Combine the hours and minutes.	

To complete the work for step 3, Kamel should write **A.** _____.
This shows the number of hours at the library and the number of hours from adding the minutes. Then, he should combine the number of hours and the remaining minutes from step 2.

Hefinds that he was away from home for **B.** _____ hours and
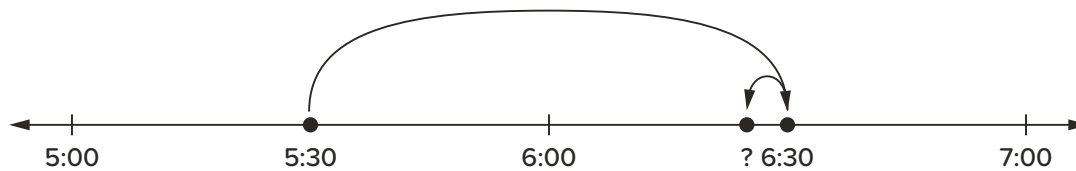
C. _____ minutes.

Unit 3 Assessment
Concepts of Measurement

Name _____ **Date** _____

20. Lamiaa puts dinner in the oven at 5:30 p.m. It needs to cook for 55 minutes. She creates the number line shown to find out when dinner will be finished cooking.

Which best explains the strategy she used?

    5:00   5:30   6:00   ? 6:30   7:00

    A. add 1 hour and subtract 5 minutes

    B. complete the hour and add 25 minutes

    C. add 1 hour and subtract 25 minutes

    D. complete the hour and add 5 minutes
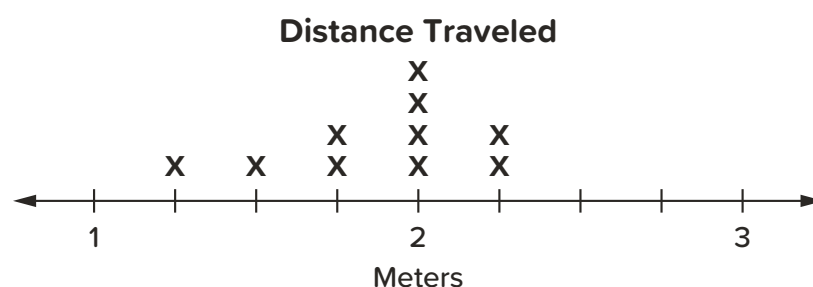
Unit 3 Assessment
Concepts of Measurement

Name _____ **Date** _____

21. Mazen throws a paper airplane 10 times and measures the distance, in meters, it travels each time. The results are shown in the table.

Distance (in meters)	Frequency
1	
$1\frac{1}{4}$	I
$1\frac{1}{2}$	I
$1\frac{3}{4}$	II
2	IIII
$2\frac{1}{4}$	
$2\frac{1}{2}$	II

Mazen uses the data to create this line plot.

Distance Traveled

Meters

Which error did Mazen make in the line plot?

    A. There should be one X above $2\frac{1}{2}$ meters.

    B. There should be another X above $1\frac{1}{2}$ meters.

    C. The line plot matches the data set exactly.

    D. Both Xs should be moved from $2\frac{1}{4}$ to $2\frac{1}{2}$.

Name _____ **Date** _____

22. Fill in the blanks below with the correct answer choice.

A.

$\frac{1}{4}$	$\frac{1}{2}$	1

B.

$\frac{1}{4}$	1	3

A worker in a tea shop records the amount of loose tea sold in grams. The data is shown.

$$6, 6, 6\frac{1}{2}, 8, 8\frac{1}{4}, 9\frac{3}{4}, 9\frac{3}{4}, 9\frac{3}{4}, 10, 12$$
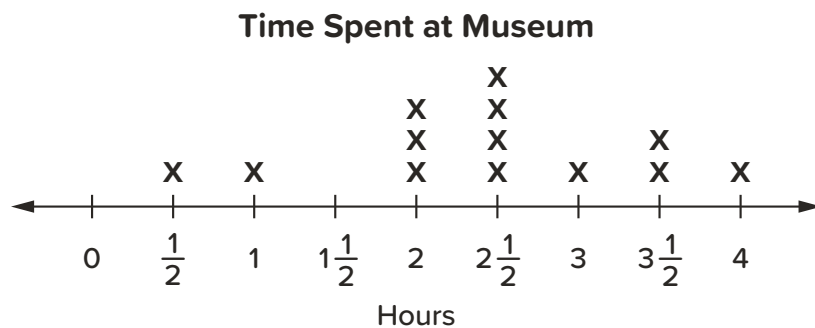
The worker wants to make a line plot to visually show this data.

A scale of **A.** _____ gram(s) should be used so that

all data can be easily shown. A key of $x =$ **B.** _____

sale(s) should be used to represent the data.

23. A museum records the amount of time guests spent there on a certain day. The line plot shows the results.

Time Spent at Museum

Hours

Which question could be answered using this line plot?

A. Did more guests arrive in the morning or in the afternoon?

B. How many guests are children, and how many are adults?

C. Did most guests spend more than an hour or less than an hour at the museum?

D. Did guests that spent longer at the museum see more exhibits?

Unit 3 Assessment
Concepts of Measurement

Name _____   **Date** _____

24. Shahd wants to find out how many minutes are in 6 days. She wrote out
the steps to solve:

$$1.\ 6 \times 7 = 42$$

$$2.\ 42 \times 60 = 2{,}520$$

Did Shahd solve correctly?

- **A.** yes, because the multiplication is correct in both steps
- **B.** yes, because she multiplied the answer in step one by 60 minutes in each hour
- **C.** no, because she should have added in the second step rather than multiplying
- **D.** no, because she should have multiplied 6 by 24 in the first step

25. A bucket contains 6 liters and 350 milliliters of blue paint. Another bucket contains 8 liters and 200 milliliters of red paint. Two friends want to know which bucket has more paint. Faten believes the first step to solve is rewrite the capacity of the red paint as 7 liters and 1,200 milliliters. Haidy says the first step is to subtract 6 liters of blue paint from 8 liters of red paint and then subtract the milliliters. Who is correct?

- **A.** Haidy, because she is subtracting the smaller amount, 6 liters, from the larger amount, 8 liters
- **B.** Haidy, because liters and milliliters should be solved as two separate equations
- **C.** Faten, because 350 milliliters could not have been subtracted from 200 milliliters without this step
- **D.** Faten, because she is changing the amounts of paint, so they are in all milliliters to be able to subtract only one number

Name _____ **Date** _____

26. Tamer has a piece of rope that is 750 centimeters long. He needs to be able to cut this into 6 pieces of rope that are each 110 centimeters long. Is Tamer's rope long enough?

    A. yes, because $110 \times 6 = 660$, $660 < 750$

    B. no, because $750 \times 6 = 4{,}500$, $4{,}500 > 750$

    C. yes, because $750 - 110 - 6 = 634$, $634 < 750$

    D. no, because $750 \div 6 = 125$, $125 > 110$

27. Fill in the blanks below with the correct answer choice from each group.

A.	**B.**
60	25
80	250
600	576
800	14,400

A box contains 30 identical books. The total weight of the books in the box is 24 kilograms. Each book weighs **A.** _____ grams. If there are **B.** _____ boxes, the total weight of all of the books will be 600 kilograms.

Name _____ **Date** _____

28. Fill in the blanks below with the correct answer choice from each group.

A.

add
divide
multiply

B.

by 4
by 10
to 4
to 10

C.

900
1,000

D.

is
is not

Each side of a square garden is 250 decimeters long. Fencing is sold in lengths of 900 decimeters.

To find the length of fencing needed to surround the garden on all sides,

first **A.** _____ 250 decimeters **B.** _____.

Then, subtract this total from **C.** _____ decimeters to find if this is

enough fencing. One package of 900 decimeters of fencing

D. _____ enough to surround the garden.

29. Fill in the blanks below with the correct answer choice from each group.

A.

4
6
7

B.

add
dividing
multiplying

C.

has
does not have

Maisa knows that there are 26 weeks in 6 months. She found that there

are about **A.** _____ weeks in each month by

B. _____ the number of weeks and months. Her

quotient **C.** _____ a remainder.

Unit 3 Assessment
Concepts of Measurement

Name _____   **Date** _____

30. Fill in the blanks below with the correct answer choice from each group.

A.
1
2
3
4

B.
100
140
500
1,500

A small truck weighs 1 tonne and 600 kilograms. A large truck weighs

2 tonnes, 500 kilograms, and 40,000 grams. The combined weight of the

two trucks is **A.** _____ tonnes and **B.** _____ kilograms.

Unit 3 Assessment Answer Key

1. **A.** The student thought there were 10 millimeters in 1 meter instead of 1,000.
   B. The student chose the correct answer.
   C. The student thought there were 1,000 kilometers in 1 meter instead of 0.001.
   D. The student chose the correct answer.
   E. The student made errors when converting.

2. Nour is comparing the weights of his cats. The first cat weighs 3 kilograms. The second cat weighs 2,700 grams. Nour knows 3 kilograms is the same as 3,000 grams, because there are 1,000 grams in 1 kilogram.

3. **A.** The student thought there were 10 milliliters in 1 liter instead of 1,000.
   B. The student thought there were 100 milliliters in 1 liter instead of 1,000.
   C. The student chose the correct answer.
   D. The student thought there were 10,000 milliliters in 1 liter instead of 1,000.

4. **A.** The student thought there were 10 decimeters in 1 kilometer, instead of 10,000.
   B. The student thought that there were 100 millimeters in 1 kilometer, instead of 100,000.
   C. The student chose the correct answer.
   D. The student did not understand the difference between milli and decimeters.
   E. The student chose the correct answer.

5. **A.** The student chose the correct answer.
   B. The student multiplied the mass by 100 rather than 1,000.
   C. The student chose the correct answer.
   D. The student thought that there were 100 grams in 1 tonne.
   E. The student thought that there were 100 kilograms in 1 tonne.

6. **A.** The student thought there were 10 milliliters in 1 liter.
   B. The student thought there were 100 milliliters in 1 liter.
   C. The student chose the correct answer.
   D. The student thought there were 10,000 milliliters in 1 liter

7. **A.** The student did not multiply 20 by 10.
   B. The student chose the correct answer.
   C. The student thought that there were 100 millimeters in 1 centimeter.
   D. The student thought that there were 1,000 millimeters in 1 centimeter.

8. A rock with a mass of 6 kilograms and 5 grams weighs more than a rock with a mass of 6,005 grams. The place values of the 6 in both weights is the same, and the place value of the 5 in both weights is different.

9. First, convert all measures to milliliters. Bucket A holds 45,000 milliliters because 45 was multiplied by 1,000. Next, order the numbers. Bucket C has the greatest capacity. Bucket B has the least capacity.

10. **A.** The student did not recognize that the number 10 on the clock represents 50 minutes.
    B. The student transposed the minute hand and hour hand and did not recognize that the number 1 on the clock represents 5 minutes.
    C. The student chose the correct answer.
    D. The student transposed the minute hand and hour hand.

11. 9:40

12. **A.** The student did not recognize that there are sixty seconds in each minute rather than twenty-four and used the wrong operation.

B. The student did not recognize that there are sixty seconds in each minute rather than twenty-four.

C. The student did not understand the relationship between minutes and seconds.

D. The student chose the correct answer.

13. Dalia read for 4 hours yesterday, which is the same as 240 minutes. Since there are 60 minutes in 1 hour, Dalia can multiply the number of hours she read by 60 to find the number of minutes.

14. **A.** The student confused hours in a day with days in a week.

B. The student chose the correct answer.

C. The student confused hours in a day with minutes in an hour.

D. The student found the number of hours in 5 days.

15. Maisa is cooking pasta. The pasta needs to cook for 12 minutes. She starts cooking the pasta at 5:30 p.m. The time it takes for the pasta to cook is the elapsed time.

Elapsed time is the time between the pasta's start time, 5:30 p.m., and its end time, 5:42 p.m. The elapsed time is 12 minutes.

16. **A.** The student did not regroup correctly.

B. The student did not include the decimal portion.

C. The student chose the correct answer.

D. The student added rather than subtracting.

17. 3:05

18. **A.** The student assumed there are 100 meters in 1 kilometer.

B. The student assumed there are 10 meters in a kilometer and subtracted incorrectly mixing up the minuend and subtrahend.

C. The student chose the correct answer.

D. The student assumed there are 10,000 meters in 1 kilometer.

19. To complete the work for step 3, Kamel should write $2 + 1 = 3$. This shows the number of hours at the library and the number of hours from adding the minutes. Then, he should combine the number of hours and the remaining minutes from step 2. He finds that he away was from home for 3 hours and 15 minutes.

20. **A.** The student chose the correct answer.

B. The student solved correctly, but this does not use the strategy modeled by the number line.

C. The student used a combination of strategies.

D. The student does not use the strategy modeled by the number line.

21. **A.** The student does not recognize that there should be two Xs.

B. The student confused the values for $1\frac{1}{2}$ and $2\frac{1}{2}$.

C. The student did not recognize the errors on the number line.

D. The student chose the correct answer.

22. A scale of $\frac{1}{4}$ gram(s) should be used so that all data can be easily shown. A key of $x = 1$ sale(s) should be used to represent the data.

23. **A.** The student chose a question that cannot be determined from the graph.

B. The student chose a question that cannot be determined from the graph.

C. The student chose the correct answer.

D. The student chose a question that cannot be determined from the graph.

Unit 3 Assessment Answer Key

24. **A.** The student did not notice that in step one Shahd multiplied by the days in a week rather than hours in a day.

B. The student identified a step that is correct but did not recognize the error in step one.

C. The student selected the incorrect operation.

D. The student chose the correct answer.

25. **A.** The student did not realize that the milliliters must be subtracted first.

B. The student did not recognize that the milliliters could not be subtracted without regrouping.

C. The student chose the correct answer.

D. The student did not realize that Fatem still wrote the capacity in liters and milliliters.

26. **A.** The student chose the correct answer.

B. The student multiplied the total length of rope by 6 rather than the length of the smaller sections.

C. The student subtracted the number of pieces and length from the total length.

D. The student misinterpreted that if 750 is divided into six equal portions the portions could be 125 centimeters or less.

27. A box contains 30 identical books. The total weight of the books in the box is 24 kilograms. Each book weighs 800 grams. If there are 25 boxes, the total weight of all of the books will be 600 kilograms.

28. To find the length of fencing needed to surround the garden on all sides, first multiply 250 decimeters by 4. Then, subtract this total from 900 decimeters to find if this is enough fencing. One package of 900 decimeters of fencing is not enough to surround the garden.

29. Maisa knows that there are 26 weeks in 6 months. She found that there are about 4 weeks in each month by dividing the number of weeks and months. Her quotient has a remainder.

30. A small truck weighs 1 tonne and 600 kilograms. A large truck weighs 2 tonnes, 500 kilograms, and 40,000 grams. The combined weight of the two trucks is 4 tonnes and 140 kilograms.

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Unit 4 Assessment
Area and Perimeter

Name _____   **Date** _____

Instructions: Write or circle your answers.

1. Which choice shows the formula for the perimeter of a rectangle?

   A. length + width

   B. length × width

   C. (2 × length) + (2 × width)

   D. (2 × length) + width

2. Fill in the blanks below with the correct answer choice from each group.
   Adam has a rectangular computer keyboard that is 40 centimeters long and
   15 centimeters wide. How can Adam calculate the perimeter of the keyboard?

   He should use the formula **A.** _____ to calculate

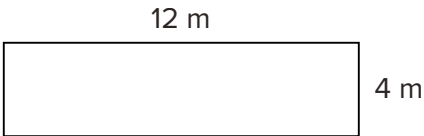   that the perimeter is **B.** _____ centimeters.

   A.
(2 × 40) + 15
40 × 15
(2 × 40) + (2 × 15)
40 + 15

   B.
55
600
95
110

3. Lamiaa wants to find the perimeter of this rectangle. How can she
   calculate its perimeter?

   12 m

   4 m

   A. She can add 12 + 4 + 12 + 4 to find the perimeter is 32 meters.

   B. She can add 12 + 4 to find the perimeter is 16 meters.

   C. She can multiply 12 × 4 × 12 × 4 to find the perimeter is
   2,304 meters.

   D. She can multiply 12 × 4 to find the perimeter is 48 meters.

Unit 4 Assessment
Area and Perimeter

Name _____   **Date** _____

4. Which choice shows the formula for the area of a rectangle?

    A. (2 × length) + (2 × width)

    B. length × width

    C. (length × width) × 2

    D. length + width

5. A city is in the shape of a rectangle. It is 4 kilometers wide and 8 kilometers long. What is the area of the city?

    A. 4 + 8 = 12 square kilometers

    B. (8 × 4) + (8 × 4) = 64 square kilometers

    C. (2 × 4) + (2 × 8) = 24 square kilometers

    D. 8 × 4 = 32 square kilometers

6. Fill in the blanks below with the correct answer choice from each group.

Gamal wants to calculate the area of a hallway floor.

First, he should measure the **A.** _____. Then he

should **B.** _____.

A.

length and width
length, width, and height

B.

multiply those measurements by 2
add those measurements and multiply by 2
multiply those measurements

Name _____   **Date** _____

7. A rectangular mirror is 900 square centimeters. The mirror is
   45 centimeters long. What is the width? Include the value and unit
   in your response.

   _____

8. Samer's textbook is 30 centimeters long. The cover of Samer's book has a
   perimeter of 100 centimeters. How wide is Samer's book?

   A. 70 centimeters

   B. 40 centimeters

   C. 130 centimeters

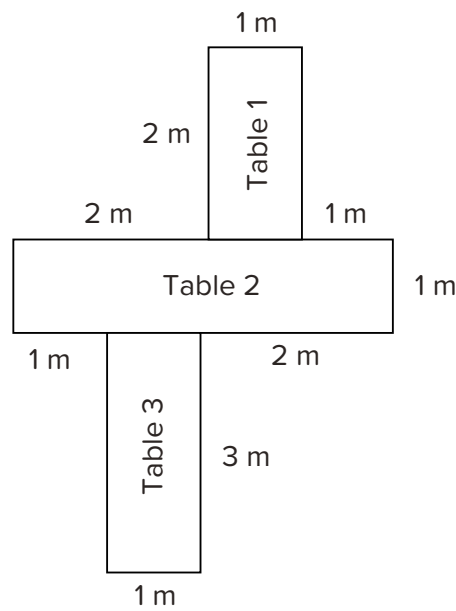   D. 20 centimeters

Unit 4 Assessment
Area and Perimeter

Name _____   **Date** _____

9. Fill in the blanks below with the correct answer choice from each group.

A company pushes together three tables for a team meeting. What is the area of the figure made by the tables? Explain how you know.

The area can be found by **A.** _____ for Table 1,

B. _____ for Table 2, and

C. _____ for Table 3, and then

D. _____ to find that the area is

E. _____ square meters.

A.	**B.**	**C.**
adding 1 + 2	adding 1 + 4	adding 1 + 3
adding 1 + 2 + 1 + 2	adding 1 + 4 + 1 + 4	adding 1 + 3 + 1 + 3
multiplying 1 × 2	multiplying 1 × 4	multiplying 1 × 3
multiplying 1 × 2 × 1 × 2	multiplying 1 × 4 × 1 × 4	multiplying 1 × 3 × 1 × 3

Name _____   **Date** _____

D.

adding the products
multiplying the products
adding the sums
multiplying the sums

E.

2
3
7
9

10. Reda wants to take a walk around a park that connects two rectangular soccer fields. How could he calculate the distance he will walk around the park?
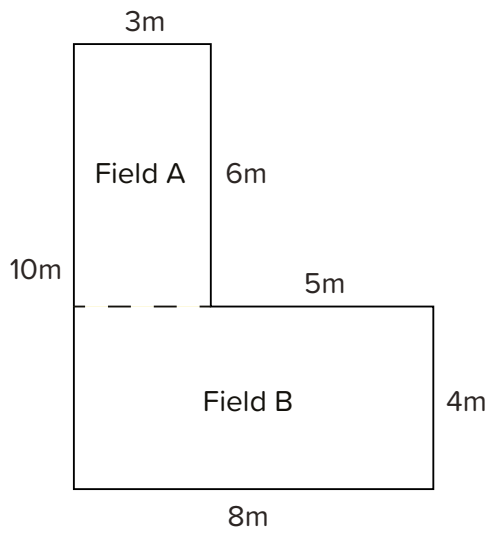
A. Multiply 3 and 6 for Field A, multiply 4 and 8 for Field B, and add those products to get a total perimeter of 50 meters.

B. Multiply the dimensions of the park, which are 10, 3, 6, 5, 4, and 8, to get a total perimeter of 28,800 meters.

C. Add together the dimensions of Field A, which are 3, 6, 3, and 6, and the dimensions of Field B, which are 4, 8, 4, and 8 to get a total perimeter of 42 meters.

D. Add together the dimensions of the park, which are 10, 3, 6, 5, 4, and 8, to get a total perimeter of 36 meters.

Unit 4 Assessment
Area and Perimeter

Name _____   **Date** _____

11. Moustafa owns a rectangular shaped shop that is 20 meters long and 5 meters wide. His brother also owns a rectangular shaped shop that is 20 meters long but it is twice as wide as Moustafa's shop. What is the area of the brother's shop? Include the value and unit in your response.

_____

12. Fatma's rectangular garden has a length that is three times the width. If w represents the width, which equations could represent the perimeter of Fatma's garden? Select *two* correct answers.

    A. $P = (3 \times w \times 2) + (w \times 2)$

    B. $P = 3 \times w \times w$

    C. $P = (2 \times w) + (3 \times w \times 2)$

    D. $P = (3 \times w) \times (3 \times w)$

    E. $P = (w \times 2) + (w \times 2) + 3$

Unit 4 Assessment Answer Key

1.
A. The student only includes 2 of the 4 sides of the rectangle in the formula.
B. The student mistook the formula for area for the formula for perimeter.
C. The student chose the correct response.
D. The student chose the formula where only the length is multiplied by two

2. He should use the formula (2 × 40) + (2 × 15) to calculate that the perimeter is 110 centimeters.

3.
A. The student chose the correct answer.
B. The student only added two sides of the rectangle.
C. The student did not use the correct operation to find perimeter.
D. The student calculated area rather than perimeter.

4.
A. The student mistook a formula for perimeter for the formula for area.
B. The student chose the correct response.
C. The student mistook a strategy for finding twice the area for the standard area formula.
D. The student added rather than multiplied.

5.
A. The student used addition for the area instead of multiplication.
B. The student knew that multiplication was involved in calculating the area, but incorrectly added the product of the dimensions to itself.
C. The student used the formula for perimeter instead of area.
D. The student chose the correct answer.

6. First, he should measure the length and width. Then he should multiply those measurements.

7. Sample student response: 20 centimeters

8.
A. The student subtracted the height from the perimeter, accounting for only one side of the rectangle.
B. The student subtracted the length of both long sides but did not divide the difference by two.
C. The student added the height and the perimeter.
D. The student chose the correct answer.

9. The area can be found by multiplying 1 × 2 for Table 1, multiplying 1 × 4 for Table 2, and multiplying 1 × 3 for Table 3, and then adding the products to find that the area is 9 square meters.

10.
A. The student calculated and combined the area of rectangles A and B.
B. The student multiplied rather than added to find the perimeter of the park.
C. The student included the 3-meter shared border of Fields A and B in the calculation.
D. The student chose the correct answer.

11. Sample student response: 200 square meters

12.
A. The student chose a correct answer.
B. The student correctly multiplied one factor by 3 but incorrectly applied the formula for area rather than perimeter.
C. The student chose a correct answer.
D. The student incorrectly multiplied both factors by 3 and used the formula for area rather than perimeter.
E. The student correctly applied the formula for perimeter but added 3 rather than multiplying one factor by 3.
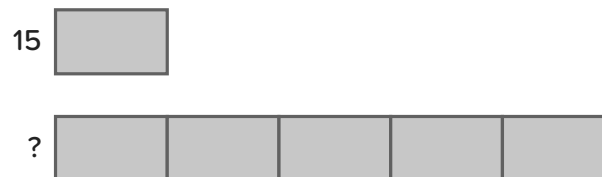
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Unit 5 Assessment
Multiplication as a Relationship

Name _____   **Date** _____

Instructions: Write or circle your answers.

1. Which situation is an example of a multiplicative comparison?

    A. When Nagi arrived at work, there were 48 cars in the parking lot. When he left work, there were 3 fewer cars in the lot.

    B. Mohamed weighs 27 kilograms. His brother is 9 kilograms heavier.

    C. Mazen began his collection with 12 trading cards. After 1 month, there are triple the number of cards in his collection.

    D. Yaseen read 15 books last year. Tarek read 5 books.

2. Fill in the blanks below with the correct answer choice from each group.

    Adel used the given model to represent the weights, in kilograms, of a young ibex and its parent. The young ibex weighs 15 kilograms.

15	

?				

    A.
kilograms heavier than
times as heavy as

    B.
3
10
20
75

    The model shows that the ibex's parent is 5 **A.** _____

    _____ the young ibex and weighs

    B. _____ kilograms.

Name _____   **Date** _____

3. Consider the equation. $d \times 6 = 60$

Manar's palm tree is 6 decimeters taller than it was last year. This year, it produces 6 times as many dates as last year.
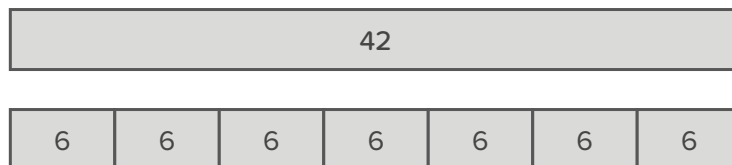
Which unknown value could Manar find by solving the given equation?

    A. the height of the tree this year if it was 60 decimeters tall last year

    B. the height of the tree last year if it is 60 decimeters tall this year

    C. the number of dates the tree produces this year if it produced 60 dates last year

    D. the number of dates the tree produced last year if it produces 60 dates this year

4. A park has 18 benches. There are 9 times as many benches as fountains in the park. In which equation does *f* represent the number of fountains in the park?

    A. $f \times 9 = 18$

    B. $9 \times 18 = f$

    C. $f + 9 = 18$

    D. $9 + 18 = f$

5. Fill in the blanks below with the correct answer choice.

6	7	36	42

A model is shown.

42

6	6	6	6	6	6	6

Which equation is best represented by this model?

$6 \times$ _____ = _____

Unit 5 Assessment
Multiplication as a Relationship

Name _____   **Date** _____

6. Consider the equation.

$$15 \times 3 =$$

Rami wants to model this equation using coins. How should Rami set up the model?

    A. 15 total coins split into 3 same-sized groups

    B. 15 total coins split into 1 group of 3 coins and 1 group of the remaining coins

    C. 1 group of 3 coins and 1 group of 15 coins

    D. 3 groups of 15 coins

7. Fill in the blanks below with the correct answer choice from each group.

A.

add
subtract
multiply by
divide by

B.

3
4
8
12

In Salah's town, there are 6 clothing stores. In the town, there are twice as many grocery stores as clothing stores. Salah models this situation with the equation $6 \times 2 = \boxed{}$.

To find the number of grocery stores in his town, Salah needs to

A. _____ 2.

There are **B.** _____ grocery stores in his town.

Name _____   **Date** _____

8. A box has 8 green balls. The box has 6 times as many yellow balls as green balls. How many yellow balls are in the box?

    A. 2

    B. 14

    C. 48

    D. 54

9. A hotel has 28 floors. The hotel has 4 times as many floors as the building next door.

How many floors does the building next door have?

_____

10. A truck driver delivers a total of 12 crates of fruits and vegetables to a store. The total number of crates of fruits and vegetables is 3 times as many as the number of crates of apples. How many crates of apples were delivered?

    A. 4

    B. 9

    C. 15

    D. 36

11. Fill in the blanks below with the correct answer choice from each group.

A.
change
not change

B.
order
grouping

The Commutative Property of Multiplication states that changing the

A. _____ of the numbers being multiplied will

B. _____ the value of the product.

Unit 5 Assessment
Multiplication as a Relationship

Name _____ **Date** _____

12. Nawal packed 24 boxes by putting 16 candles in each box. Rami packed 16 boxes by putting 24 candles in each box.

Ola wants to compare the total of number of candles Nawal packed with the total number of candles that Rami packed.

What can Ola conclude?

    A. Nawal and Rami each packed the same number of candles because of the Associative Property of Multiplication.

    B. Nawal and Rami each packed the same number of candles because of the Commutative Property of Multiplication.

    C. Nawal and Rami each packed a different number of candles because of the Associative Property of Multiplication.

    D. Nawal and Rami each packed a different number of candles because of the Commutative Property of Multiplication.

13. Maisa writes the expression 126 × 0.

Which statement is true?

    A. By applying the Identity Property of Multiplication, Maisa can simplify the expression to equal 0.

    B. By applying the Zero Property of Multiplication, Maisa can simplify the expression to equal 0.

    C. By applying the Identity Property of Multiplication, Maisa can simplify the expression to equal 126.

    D. By applying the Zero Property of Multiplication, Maisa can simplify the expression to equal 126.

14. Which statement best describes the pattern of products created by multiplying one-digit whole numbers by 10?

    A. The product always has a 0 in the Ones place.

    B. The product always has a 0 in the Tens place.

    C. The product is always a three-digit number.

    D. The product is always a one-digit number.

Unit 5 Assessment
Multiplication as a Relationship

Name _____   **Date** _____

15. Consider the pattern of products created by multiplying a one-digit whole number by 100.

   Which statement best describes the pattern?

   A. Each product ends with two zeros.

   B. Each product ends with three zeros.

   C. Each product ends with the single-digit factor repeated twice.

   D. Each product ends with the single-digit factor repeated three times.

16. Fill in the blanks below with the correct answer choice from each group.

A.

10
100
1,000

B.

2
200
2,000
20,000

C.

Product of a Number and 100
Product of a Number and 1,000

A partially completed table is shown.

Factors	Column B
2 x 1,000 =	☐
4 x ☐ =	4,000
10 x 1,000 =	10,000
32 x 1,000 =	32,000

Based on the pattern in the table, the ☐ in the Factors column should

be replaced by **A.** _____. The ☐ in column B

should be replaced by **B.** _____. The phrase

C. _____

would be an accurate title for column B.

Name _____   **Date** _____

17. Fill in the blanks below with the correct answer choice from each group.

Consider the expression.

$$4 \times (9 \times 10)$$

A.
(4 × 9) × 10
4 × (10 × 9)
(9 × 10) × 4

B.
change
not change

The Associative Property of Multiplication can be applied to rewrite the

expression as **A.** _____. This will

B. _____ the value of the expression.

18. Which equation shows how to apply the Associative Property of
Multiplication to determine the value of 7 × (8 × 10)?

   A. 15 × 10 = 150

   B. 56 × 10 = 560

   C. 7 × 80 = 780

   D. 7 × 18 = 126

Unit 5 Assessment
Multiplication as a Relationship

Name _____ **Date** _____

19. Fill in the blanks below with the correct answer choice from each group.

A.
| 3 as (3 × 1) |
| 200 as (2 × 100) |

B.
| grouping |
| order |

C.
| 2 |
| 100 |

Explain how the Associative Property can be used to find the value of 3 × 200.

First, rewrite **A.** _____. Then, change the

B. _____ of the factors so that

3 × **C.** _____ is in parentheses.

20. Kamel used the Associative Property to rewrite and correctly evaluate this expression: 6,000 × 7.

Which equation was *most likely* part of Kamel's work?

    A. 1,000 × 13 = 1,300

    B. 1,000 × 42 = 4,200

    C. 1,000 × 13 = 13,000

    D. 1,000 × 42 = 42,000
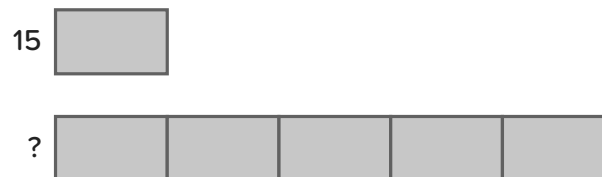
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    15 [ ]

    ? [ ][ ][ ][ ][ ]

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kilograms heavier than
times as heavy as

    B.

3
10
20
75

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Name _____   **Date** _____

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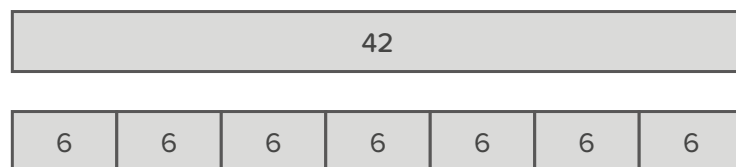
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Unit 5 Assessment
Multiplication as a Relationship

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add
subtract
multiply by
divide by

B.

3
4
8
12

In Salah's town, there are 6 clothing stores. In the town, there are twice as many grocery stores as clothing stores. Salah models this

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To find the number of grocery stores in his town, Salah needs to

A. _____ 2.

There are **B.** _____ grocery stores in his town.

Name _____   **Date** _____

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    _____

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            | not change |

    B. | order |
            | grouping |

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Unit 5 Assessment
Multiplication as a Relationship

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    C. The product is always a three-digit number.

    D. The product is always a one-digit number.

Unit 5 Assessment
Multiplication as a Relationship

Name _____   **Date** _____

15. Consider the pattern of products created by multiplying a one-digit whole number by 100.

Which statement best describes the pattern?

    A. Each product ends with two zeros.

    B. Each product ends with three zeros.

    C. Each product ends with the single-digit factor repeated twice.

    D. Each product ends with the single-digit factor repeated three times.

16. Fill in the blanks below with the correct answer choice from each group.

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1,000

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200
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Unit 5 Assessment
Multiplication as a Relationship

Name _____ **Date** _____

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Consider the expression.

$$4 \times (9 \times 10)$$

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(4 × 9) × 10
4 × (10 × 9)
(9 × 10) × 4

B.
change
not change

The Associative Property of Multiplication can be applied to rewrite the

expression as **A.** _____. This will

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18. Which equation shows how to apply the Associative Property of Multiplication to determine the value of $7 \times (8 \times 10)$?

    A. $15 \times 10 = 150$

    B. $56 \times 10 = 560$

    C. $7 \times 80 = 780$

    D. $7 \times 18 = 126$

Unit 5 Assessment
Multiplication as a Relationship

Name _____   **Date** _____

19. Fill in the blanks below with the correct answer choice from each group.

A.
3 as (3 × 1)
200 as (2 × 100)

B.
grouping
order

C.
2
100

Explain how the Associative Property can be used to find the value of 3 × 200.

First, rewrite **A.** _____. Then, change the

B. _____ of the factors so that

3 × **C.** _____ is in parentheses.

20. Kamel used the Associative Property to rewrite and correctly evaluate this expression: 6,000 × 7.

Which equation was *most likely* part of Kamel's work?

    A. 1,000 × 13 = 1,300

    B. 1,000 × 42 = 4,200

    C. 1,000 × 13 = 13,000

    D. 1,000 × 42 = 42,000

Unit 5 Assessment Answer Key

1. **A.** The student misidentified a situation using subtraction as a multiplicative comparison.
   B. The student misidentified a situation using addition as a multiplicative comparison.
   C. The student chose the correct answer.
   D. The student did not recognize these two statements do not make a multiplicative comparison.

2. The model shows that the ibex's parent is 5 times as heavy as the young ibex and weighs 75 kilograms.

3. **A.** The student identified a value that would be found by addition.
   B. The student identified a value that would be found by subtraction.
   C. The student confused the product as one of the factors in the multiplication equation.
   D. The student chose the correct answer.

4. **A.** The student chose the correct answer.
   B. The student reversed the comparison by confusing the number of benches and number of fountains.
   C. The student attempted to apply an additive comparison.
   D. The student attempted to apply an additive comparison and reversed the comparison by confusing the number of benches and number of fountains.

5. 6 × 7 = 42

6. **A.** The student confused the number of coins in each group with the total number of coins.
   B. The student set this up as a subtraction model.
   C. The student aligned the number of coins in each group with the number of groups and aligned the number of coins in each group with the total number when representing the goal.
   D. The student chose the correct answer.

7. To find the number of grocery stores in his town, Salah needs to multiply by 2. There are 12 grocery stores in his town.

8. **A.** The student subtracted rather than multiplying.
   B. The student added rather than multiplying.
   C. The student chose the correct answer.
   D. The student made a computational error when multiplying.

9. 7

10. **A.** The student chose the correct answer.
    B. The student subtracted rather than dividing.
    C. The student added rather than dividing.
    D. The student multiplied rather than dividing.

11. The Commutative Property of Multiplication states that changing the order of the numbers being multiplied will not change the value of the product.

12. **A.** The student confused the Associative and Commutative Properties of Multiplication.
    B. The student chose the correct answer.
    C. The student confused the Associative and Commutative Properties of Multiplication and did not recognize that the Commutative Property ensures that both expressions have the same value.
    D. The student did not recognize that the Commutative Property ensures that both expressions have the same value.

13. **A.** The student misidentified properties and applied the Zero Property of Multiplication.
    B. The student chose the correct answer.
    C. The student confused multiplication by 1 with multiplication by 0.
    D. The student chose the correct property but applied it as if it was the Identity Property.

Unit 5 Assessment Answer Key

14. A. The student chose the correct answer.

B. The student confused the Ones place and the Tens place.

C. The student assumed that the number of digits in the product will be the sum of the number of digits in each factor.

D. The student assumed that the number of digits in the product will be the same as in the original one-digit number.

15. A. The student chose the correct answer.

B. The student aligned the product with the number of digits in 100.

C. The student used multiple iterations of the factor aligned with the number of zeros in 100.

D. The student used multiple iterations of the factor aligned with the number of digits in 100.

16. Based on the pattern in the table, the ☐ in the Factors column should be replaced by 1,000. The ☐ in column B should be replaced by 2,000. The phrase Product of a Number and 1,000 would be an accurate title for column B.

17. The Associative Property of Multiplication can be applied to rewrite the expression as (4 × 9) × 10. This will not change the value of the expression.

18. A. The student added the first two factors and then multiplied by 10.

B. The student chose the correct answer.

C. The student incorrectly applied the Associative Property.

D. The student added the factors in the parentheses instead of multiplying.

19. First, rewrite 200 as (2 × 100). Then change the grouping of the factors so that 3 × 2 is in parentheses.

20. A. The student misapplied the Associative Property by adding 6 and 7 to get 13 rather than multiplying to get 42 and made an error in place value when multiplying 1,000 by 13.

B. The student made an error in place value when multiplying 1,000 by 42.

C. The student misapplied the Associative Property by adding 6 and 7 to get 13 rather than multiplying to get 42.

D. The student chose the correct answer.

Unit 6 Assessment
Factors and Multiples

Name _____ **Date** _____

Instructions: Write or circle your answers.

1. Which phrase best describes a factor?

   A. the product of one number multiplied by another number

   B. a whole number that divides a number evenly with no remainder

   C. a number that can be added to another number

   D. the difference of a number subtracted from another number

2. Which list includes all factors of 24?

   A. 0, 1, 4, 6, 24

   B. 24, 48, 72, 96

   C. 2, 3, 4, 6, 8, 12

   D. 1, 2, 3, 4, 6, 8, 12, 24

3. Which is a prime number?

   A. 1

   B. 7

   C. 15

   D. 6

4. Which is a composite number?

   A. 1

   B. 3

   C. 15

   D. 2

Unit 6 Assessment
Factors and Multiples

Name _____   **Date** _____

5. Fill in the blanks below with the correct answer choice from each group.

A.
(1, 27)
(1, 3, 9, 27)
(27, 54, 81)

B.
composite
prime

C.
exactly two factors
more than two factors

The factors of 27 are **A.** _____. The factors

show that the number 27 is **B.** _____

because it has **C.** _____.

6. Which phrase defines common factors between two numbers, such as 16 and 28?

A. the factors of each number, 16 and 28, listed with the greatest factor found on both lists circled

B. the factors of each number, 16 and 28, listed with the same factors found on both lists circled

C. the factors of each number, 16 and 28, listed with the smallest factor found on both lists circled

D. the factors of each number, 16 and 28, listed with the differing factors found on both lists circled

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Unit 6 Assessment
Factors and Multiples

Name _____   **Date** _____

7. Fill in the blanks below with the correct answer choice from each group.

A.

was
was not

B.

should have only listed the number 4
should have also listed the numbers 8 and 16
listed all factors common to both 4 and 16

Osman listed the common factors of 4 and 16 as (1, 2, 4). Was he correct?

Osman **A.** _____ correct because he **B.** _____

_____ .

8. Fill in the blanks below with the correct answer choice from each group.

A.

two
four
eight

B.

(1, 7)
(1, 5, 7, 35)
(1, 2, 3, 6, 7, 14, 21, 42)

The common factors of 35 and 42 include **A.** _____

factors: **B.** _____ .

9. Which number is the greatest common factor (GCF) of 84 and 96?

    A. 6

    B. 7

    C. 12

    D. 21

Name _____   **Date** _____

10. Which pair of numbers has the same greatest common factor as 42 and 12?

    A. 9 and 6

    B. 8 and 27

    C. 18 and 60

    D. 36 and 48

11. Which phrase best describes multiples of a whole number?

    A. a product of two whole numbers multiplied together

    B. a whole number plus a different whole number

    C. a whole number minus a whole number

    D. a quotient of a whole number divided by a fraction

12. The number 3 is plotted on the number line shown.
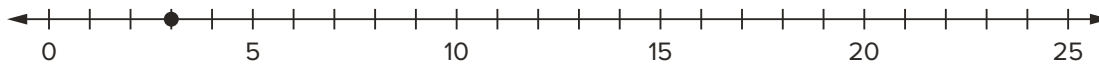
How many *additional* multiples of 3 can be plotted on this number line?

    A. five

    B. seven

    C. eight

    D. nine

Unit 6 Assessment
Factors and Multiples

Name _____   **Date** _____

13. Fill in the blanks below with the correct answer choice from each group.

A.
was
was not

B.
(6, 12, 18)
(3, 6, 9, 12, 15, 18, 21)
(2, 4, 6, 8, 10, 12, 14, 16, 18)

C.
(6, 12, 18)
(3, 6, 9, 12, 15, 18, 21)
(2, 4, 6, 8, 10, 12, 14, 16, 18)

D.
all equivalent
the greatest equivalent
the smallest equivalent

Rajaa listed the common multiples of 2 and 3 as 6 only. Was she correct?

Rajaa **A.** _____ correct because multiples

of 2 include **B.** _____ and multiples of 3

include **C.** _____ Common multiples are

D. _____ multiples between both numbers.

14. The common multiples of 6 and 8 are the same as the multiples of which number?

    A. 8

    B. 12

    C. 24

    D. 48

Unit 6 Assessment
Factors and Multiples

Name _____   **Date** _____

15. Fill in the blanks below with the correct answer choice from each group.

A.

B
D
E
F

B.

2 only
2 and 4 only
4 and 8 only
2, 4, and 8

The diagram shows the relationship between the multiples of 2, the multiples of 4, and the multiples of 8.

Multiples of 2   **Multiples of 4**

A   B   C

D   E   F

G
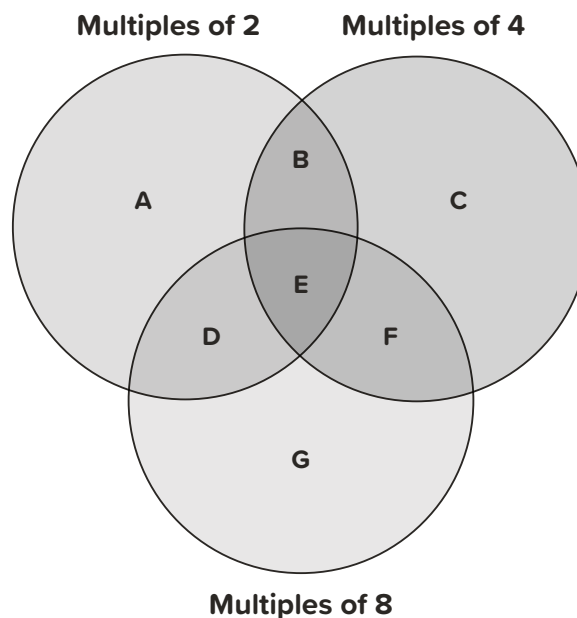
Multiples of 8

In the diagram, the number 20 would be placed in the section

labeled with the letter **A.** _____ because it is a multiple of

B. _____.

Unit 6 Assessment
Factors and Multiples

Name _____ **Date** _____

16. Which of these statements is true?

    A. Six is a factor of 45, but 6 is not a factor of 46.

    B. Seven is a factor of 49, but 7 is not a factor of 14.

    C. Eight is a factor of 66, but 8 is not a factor of 65.

    D. Nine is a factor of 54, but 9 is not a factor of 89.

17. Which *two* statements explain the relationship between factors and multiples?

    A. Thirty-six is a multiple of 3, 6, and 9, therefore 3, 6, and 9 are factors of 36.

    B. Thirty-six is a factor of 3, 6, and 9, therefore 3, 6, and 9 are multiples of 36.

    C. Three, 6, and 9 are factors of 36, therefore 3, 6, and 9 are multiples of 36.

    D. Twenty-seven is a multiple of 3 and 9, therefore 3 and 9 are factors of 27.

    E. Twenty-seven is a factor of 3 and 9, therefore 3 and 9 are multiples of 27.

    F. Three and 9 are factors of 27, therefore 3 and 9 are multiples of 27.

Unit 6 Assessment Answer Key

1. **A.** The student incorrectly chose the definition of a multiple.

   B. The student chose the correct answer.

   C. The student incorrectly chose the definition of an addend.

   D. The student described subtraction instead of division.

2. **A.** The student incorrectly thought zero was a factor of 24.

   B. The student started counting multiples of 24 instead of the factors of 24.

   C. The student did not include the factors 1 and 24.

   D. The student chose the correct answer.

3. **A.** The student incorrectly identified a number that is neither prime nor composite.

   B. The student chose the correct answer.

   C. The student incorrectly thought all prime numbers were odd.

   D. The student incorrectly thought prime numbers were even because 2 is prime and even.

4. **A.** The student incorrectly identified a number that is neither prime nor composite.

   B. The student selected a prime number.

   C. The student chose the correct answer.

   D. The student incorrectly thought all even numbers are composite.

5. The factors of 27 are (1, 3, 9, 27). The factors show that the number 27 is composite because it has more than two factors.

6. **A.** The student confused finding the greatest common factor with finding all common factors.

   B. The student chose the correct answer.

   C. The student confused finding the least common multiple with common factors.

   D. The student confused common factors with factors that are not common.

7. Osman was correct because he listed all factors common to both 4 and 16.

8. The common factors of 35 and 42 include two factors: (1, 7).

9. **A.** The student found a common factor of 84 and 96, but not the greatest common factor.

   B. The student chose a number that is a factor of 84, but not of 96.

   C. The student chose the correct answer.

   D. The student chose a number that is a factor of 84, but not of 96.

10. **A.** The student chose a pair of numbers with a greatest common factor of 3, not 6.

   B. The student chose a pair of numbers with a greatest common factor of 1, not 6.

   C. The student chose the correct answer.

   D. The student chose a pair of numbers with a greatest common factor of 12, not 6.

11. **A.** The student chose the correct answer.

   B. The student incorrectly added instead of multiplying.

   C. The student incorrectly used subtraction.

   D. The student incorrectly used division.

12. **A.** The student incorrectly found the multiples of 5.

   B. The student chose the correct answer.

   C. The student incorrectly included 3 in the count.

   D. The student incorrectly identified 1 as a multiple of 3.

13. Rajaa was not correct because multiples of 2 include (2, 4, 6, 8, 10, 12, 14, 16, 18) and multiples of 3 include (3, 6, 9, 12, 15, 18, 21). Common multiples are all equivalent multiples between both numbers.

14. **A.** The student thought that all multiples of 8 are also multiples of 6.

B. The student thought that 12 is a multiple of 8.

C. The student chose the correct answer.

D. The student did not realize that 24 is a multiple of both 6 and 8.

15. In the diagram, the number 20 would be placed in the section labeled with the letter B because it is a multiple of 2 and 4 only.

16. **A.** The student thought 6 was a factor of 45.

B. The student did not realize that 7 is a factor of 14.

C. The student thought 8 was a factor of 66.

D. The student chose the correct answer.

17. **A.** The student chose the correct answer.

B. The student did not understand the terms factor and multiple.

C. The student misunderstood that the words factor and multiple have different meanings.

D. The student chose the correct answer.

E. The student did not understand the terms factor and multiple.

F. The student misunderstood that the words factor and multiple have different meanings.

Unit 7 Assessment

Multiplication and Division: Computation and Relationships

Name _____ **Date** _____

Instructions: Write or circle your answers.

1. Which area model best represents 69 × 4?
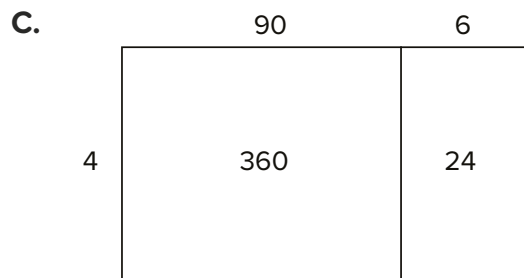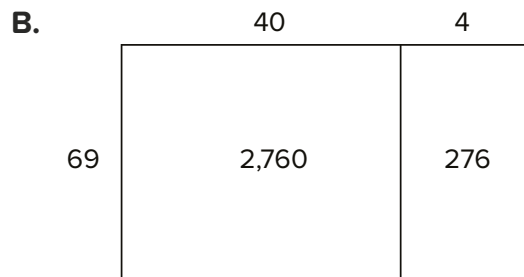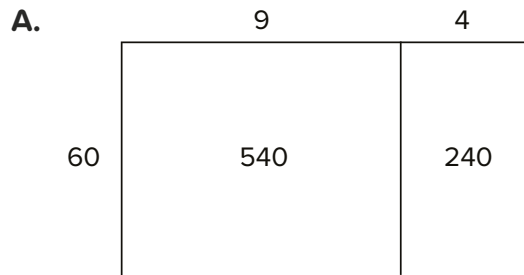
   A.

	9	4
60	540	240

   B.

	40	4
69	2,760	276

   C.

	90	6
4	360	24

   D.

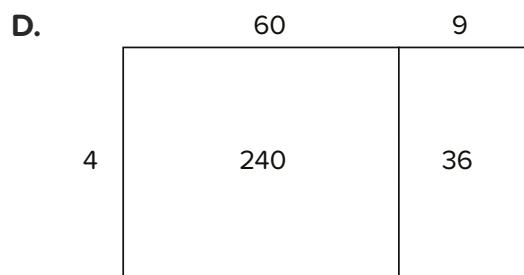 | | 60 | 9 |
   |----|-----|----|
   | 4 | 240 | 36 |

Unit 7 Assessment

Multiplication and Division: Computation and Relationships

Name _____   **Date** _____

2. What is the correct way to use the area model to multiply 362 × 8?

	300	60	2
8			
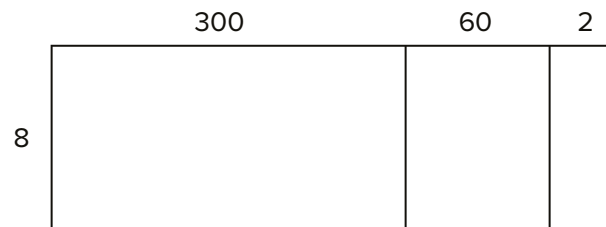
    A. (300 × 8) + (60 × 8) + (2 × 8)

    B. (360 × 2) + (62 × 8)

    C. (300 × 8) × (60 × 8) × (2 × 8)

    D. (360 × 8) × (2 × 8)

3. Fill in the blanks below with the correct answer choice from each group.

   What is the correct way to calculate 591 × 9 using the Distributive Property?

   Write 591 as **A.** _____ and

   B. _____.

A.
50 + 91
500 + 90 + 1
5 + 9 + 1
500 + 9 + 1

B.
add each number in the sum to 9
divide each number in the sum by 9
multiply each number in the sum by 9

4. Which choice correctly uses the Distributive Property of Multiplication to find the product of 429 × 7?

    A. (4 × 7) + (2 × 7) + (9 × 7)

    B. (400 × 7) + (20 × 7) + (9 × 7)

    C. (4 + 7) × (2 + 7) × (9 + 7)

    D. (400 + 7) × (20 + 7) × (9 + 7)

Multiplication and Division: Computation and Relationships

Name _____ **Date** _____

5. Which partial products can be used to solve 48 × 4?

    A. (4 × 4) + (8 × 4)

    B. (4 × 4) × (8 × 4)

    C. (40 × 4) + (8 × 4)

    D. (40 × 4) × (8 × 4)

6. Which *best* estimates a given product?

    A. To estimate 249 × 3, use 300 × 3 = 900.

    B. To estimate 249 × 3, use 200 × 10 = 2,000.

    C. To estimate 349 × 8, use 400 × 8 = 3,200.

    D. To estimate 349 × 8, use 300 × 10 = 3,000

7. What is the missing value in the multiplication problem?

$$\begin{array}{r} 1721 \\ \times\ \ \ \ 4 \\ \hline ?884 \end{array}$$

8. What is the unknown value in the area model representing 29 × 20?

	10	10
20	200	200
9	?	90

    A. 19

    B. 90

    C. 200

    D. 30

Unit 7 Assessment

Multiplication and Division: Computation and Relationships

Name _____ **Date** _____

9. Fill in the blanks below with the correct answer choice from each group.

What would be a reasonable answer for 284 × 7?

A.
200
2,000
300
3,000

B.
0
10
200
300

C.
0
10
200
300

About **A.** _____ would be a reasonable answer because 284

rounds to **B.** _____ and 7 rounds to **C.** _____.

10. What is the missing value in area model that represents 19 × 15?

	10	5
10	100	50
9	90	?

---

11. Which partial products model represents this multiplication problem?

$$
\begin{array}{r}
3\,4 \\
\times\,1\,4 \\
\hline
1\,3\,6 \\
3\,4\,0 \\
\hline
4\,7\,6
\end{array}
$$

A. (4 × 4) + (4 × 10) + (40 × 4) + (30 × 10)

B. (4 + 4) + (4 + 10) + (30 + 4) + (30 + 10)

C. (4 × 4) + (4 × 30) + (10 x 4) + (10 × 30)

D. (4 + 4) x (4 + 30) x (10 + 4) x (10 + 30)

Unit 7 Assessment
Multiplication and Division: Computation and Relationships

Name _____   **Date** _____

12. Amir's study group is coming to his house. There are 11 people in the group, including Amir. He would like each person in the group to have 12 crackers as snacks. Which area model represents this problem? How many crackers does Amir need?

A.

	11	1
12	132	12
2	22	2

B.

	1	1
12	12	12
11	11	11

C.

	10	1
10	100	10
2	20	2

D.

	10	1
1	10	1
2	20	2

13. Which is the quotient, divisor, and dividend in 136 ÷ 8 = 17?

8	17	136

The quotient is _____.

The divisor is _____.

The dividend is _____.

Unit 7 Assessment
Multiplication and Division: Computation and Relationships

Name _____ **Date** _____

14. Sanaa has 220 pages of a book to read for class. She needs to finish the book in 7 days. She wants to read an equal number of pages each day. Can she do that? Explain.

   A. Yes, she can read 31 pages each day.

   B. No, she will have to read 3 fewer pages on one of the days

   C. No, she will have to read 3 additional pages on one of the days.

   D. Yes, she can read 34 pages each day.

15. Which pattern can you identify in the following division problems?

   $$80 \div 4 = 20$$
   $$800 \div 4 = 200$$
   $$8,000 \div 4 = 2,000$$

   A. The quotients are multiples of 10.

   B. The quotients are multiples of 100.

   C. The dividends are multiples of 100.

   D. The dividends are multiples of 1,000.

16. Which number *best* completes the area model to find $94 \div 4$?

	?	$4 \times 3 = 12$	
4	20	3	R2
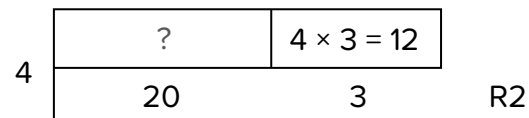
   A. $4 \times 2 = 8$

   B. $4 \times 20 = 80$

   C. $20 + 4 = 24$

   D. $4 + 16 = 20$

Unit 7 Assessment

Multiplication and Division: Computation and Relationships

Name _____ **Date** _____

17. Yaseen divides 823 ÷ 6 using the partial quotients algorithm. What is his answer?

$$
\begin{array}{r|l}
6\,)\,823 & 100 \\
-600 & \\ \hline
223 & 30 \\
-180 & \\ \hline
43 & 7 \\
-42 & \\ \hline
1 &
\end{array}
$$

    A. 223

    B. 223 R1

    C. 137

    D. 137 R1

18. What is the best way to estimate 7,924 ÷ 4?

    A. Round 7,924 to 8,000 and round 4 to 10. Then 8,000 ÷ 10 = 800.

    B. Round 7,924 to 8,000. Then 8,000 ÷ 4 = 2,000.

    C. Round 7,924 to 7,000 and round 4 to 10. Then 7,000 ÷ 10 = 700.

    D. Round 7,924 to 7,000. Then 7,000 ÷ 4 = 1,750.

19. What are the missing values in the division problem below?

$$
\begin{array}{r}
? \\
4\,)\,\overline{292} \\
-28 \\ \hline
? \\
-12 \\ \hline
0
\end{array}
$$

Unit 7 Assessment
Multiplication and Division: Computation and Relationships

Name _____ **Date** _____

20. Wagdy divides $6\overline{)5{,}198}$ using the standard algorithm. What should he write for the largest digit of the quotient and where should he write it?

    A. He should write 1 in the Thousands place because 5 goes into 6 one time.

    B. He should write 8 in the Thousands place because 6 goes into 51 eight times.

    C. He should write 1 in the Hundreds place because 5 goes into 6 one time.

    D. He should write 8 in the Hundreds place because 6 goes into 51 eight times.

21. Which expression can be used to check the answer of this division problem?

$$
\begin{array}{r}
124 \ \text{R2} \\
6\overline{)746} \\
\underline{-6} \\
14 \\
\underline{-12} \\
26 \\
\underline{-24} \\
2
\end{array}
$$

    A. 124 + 6

    B. 124 × 6

    C. 124 + 6 × 2

    D. 124 × 6 + 2

22. Ameen wants to give 180 marbles from his marble collection to 6 of his friends. He wants to give each friend the same number of marbles. How many marbles will each friend receive?

_____

Unit 7 Assessment Answer Key

1. **A.** The student did not write the place values of the factors in the correct places.
    B. The student did not break up the factors according to place values.
    C. The student did not break up the factor according to place values.
    D. The student chose the correct answer.

2. **A.** The student chose the correct answer.
    B. The student decomposed one factor incorrectly.
    C. The student used the incorrect operation to combine expressions.
    D. The student used the incorrect operation to combine expressions.

3. Write 591 as 500 + 90 + 1 and multiply each number in the sum by 9.

4. **A.** The student did not use zeroes to hold the place values.
    B. The student chose the correct answer.
    C. The student did not use the Distributive Property correctly and did not use zeroes to hold the place values.
    D. The student did not use the Distributive Property correctly.

5. **A.** The student did not use the correct place value in the first expression.
    B. The student did not use the correct place value in the first expression and the two expressions should not be multiplied together.
    C. The student chose the correct answer.
    D. The student multiplied the two expressions instead of adding them.

6. **A.** The student rounded the first factor up.
    B. The student rounded the second factor up.
    C. The student rounded the first factor up.
    D. The student chose the correct answer.

7. 6

8. **A.** The student added the two values instead of multiplying them.
    B. The student chose the correct answer.
    C. The student multiplied the wrong factors.
    D. The student added and used the wrong factors.

9. About 3,000 would be a reasonable answer because 284 rounds to 300 and 7 rounds to 10.

10. 45

11. **A.** The student did not use the correct place value in the third expression.
    B. The student did not use the correct operation.
    C. The student chose the correct answer.
    D. The student used incorrect operations.

12. **A.** The student did not use the correct factors.
    B. The student did not use the correct factors.
    C. The student chose the correct answer.
    D. The student did not use the correct factors.

13. The quotient is 17.
    The divisor is 8.
    The dividend is 136.

14. **A.** The student forgot to address the remainder in the division problem.
    B. The student did not interpret the remainder correctly.
    C. The student chose the correct answer.
    D. The student divided incorrectly.

15. **A.** The student chose the correct answer.
    B. The student selected the incorrect place value or is looking at the dividend.
    C. The student does not understand what multiples are.
    D. The student selected the incorrect place value or does not understand what multiples are.

16. A. The student did not use zeroes to indicate the place value.

    B. The student chose the correct answer.

    C. The student added the 4 and the 20 listed.

    D. The student found a number that, added to 4, equals 20.

17. A. The student chose the difference after the first division.

    B. The student chose the difference after the first division and added the remainder.

    C. The student did not write the remainder.

    D. The student chose the correct answer.

18. A. The student rounded the divisor up.

    B. The student chose the correct answer.

    C. The student rounded the dividend up.

    D. The student rounded the dividend and divisor up.

19.

$$
\begin{array}{r}
73 \\
4\overline{)292} \\
-28 \\
\hline
12 \\
-12 \\
\hline
0
\end{array}
$$

20. A. The student did not use 6 as the divisor.

    B. The student did not use place value correctly.

    C. The student did not use 6 as the divisor.

    D. The student chose the correct answer.

21. A. The student used addition to check division.

    B. The student did not add the remainder.

    C. The student used addition to check division and then multiplied the remainder.

    D. The student chose the correct answer.

22. 30

Unit 8 Assessment
Order of Operations

Name _____ **Date** _____

Instructions: Write or circle your answers.

1. Find the sum.

$$\begin{array}{r} 165{,}285 \\ +\ 724{,}315 \\ \hline \end{array}$$

     A. 888,600

     B. 889,570

     C. 889,590

     D. 889,600

2. Find the difference.

$$\begin{array}{r} 521{,}647 \\ -\ 214{,}657 \\ \hline \end{array}$$

     A. 314,090

     B. 306,090

     C. 306,990

     D. 336,990

3. Find the product.

$$\begin{array}{r} 18 \\ \times\ 39 \\ \hline \end{array}$$

4. Find the quotient.

$$14\overline{)784}$$

     A. 50

     B. 56

     C. 49 R 98

     D. 48 R 12

Name _____ **Date** _____

5. Which of the following equations equals 6 when simplified?

    A. $18 - 3 \times 4$

    B. $3 \times 1 + 1$

    C. $12 + 6 \div 3$

    D. $24 \div 6 - 2$

6. What is the first step when solving the following problem?

$16 + 8 \div 2$

    A. Add 16 plus 8.

    B. Divide 8 by 2.

    C. Add 16 plus 4.

    D. Divide 24 by 2.

7. Follow the order of operations to solve the problem.

$30 - 4 \times (1 + 2)$

    A. 102

    B. 78

    C. 28

    D. 18

8. Follow the order of operations to solve the problem.

$205 - 12 \div 4 + 18 \times 6$

_____

Unit 8 Assessment
Order of Operations

Name _____   **Date** _____

9. Fill in the blanks below with the correct answer choice from each group.

   Rashad made 24 cookies. He divided them equally between himself, his
   brother, and his sister. He ate some of the cookies he saved for himself
   and has 4 cookies left. Let c be the number of cookies he ate. How can
   Rashad determine how many cookies he ate?

   A.
$24 \div 3 + 4 = c$
$24 \div 3 - c = 4$
$24 \div 4 + 3 = c$
$24 \div 4 - c = 3$

   B.
4
6
8
10

   He can solve the equation **A.** _____ to find that he

   ate **B.** _____ cookies.

10. Fill in the blanks below with the correct answer choice from each group.

    A furniture company makes two types of chairs. Model A uses 48 screws,
    24 washers, and 21 pieces of wood. Model B uses 52 screws, 32 washers,
    and 26 pieces of wood. The company assembled 15 Model A chairs and
    7 Model B chairs today. How can the company determine how many
    screws, washers, and pieces of wood it used in total?

    A.
$7 \times (48 + 24 + 21) + 15 \times (52 + 32 + 26)$
$7 \times 48 + 24 + 21 + 15 \times 52 + 32 + 26$
$15 \times (48 + 24 + 21) + 7 \times (52 + 32 + 26)$
$15 \times 48 + 24 + 21 + 7 \times 52 + 32 + 26$

    B.
1,187
2,165
1,219
2,301

    It can simplify **A.** _____ to find that it used

    B. _____ screws, washers, and pieces of wood to

    make the chairs.

Unit 8 Assessment Answer Key

1. **A.** The student did not use the correct addition facts in the Thousands place.
   B. The student subtracted in the Tens place.
   C. The student did not use place value to correctly add the Ones place.
   D. The student chose the correct answer.

2. **A.** The student did not use the correct subtraction facts in the Hundreds and thousands place.
   B. The student did not use place value correctly in the Hundreds place.
   C. The student chose the correct answer.
   D. The student added instead of subtracted in the Ten Thousands place.

3. 702

4. **A.** The student did not finish the division algorithm.
   B. The student chose the correct answer.
   C. The student chose the incorrect quotient of 78 divided by 14.
   D. The student chose the incorrect quotient of 78 divided by 14 and made an error in subtracting.

5. **A.** The student chose the correct answer.
   B. The student added first, then multiplied, and did not follow the order of operations.
   C. The student added first, then divided, and did not follow the order of operations.
   D. The student subtracted first, then divided, and did not follow the order of operations.

6. **A.** The student added the first two numbers and did not follow the order of operations.
   B. The student chose the correct answer.
   C. The student chose the second step instead of the first.
   D. The student did not follow the order of operations, and chose the second step instead of the first.

7. **A.** The student added 4 to 30 instead of subtracting and then multiplied by 3.
   B. The student subtracted 4 from 30 and then multiplied by 3.
   C. The student subtracted 4 from 30 and then added 2.
   D. The student chose the correct answer.

8. 310

9. He can solve the equation $24 \div 3 - c = 4$ to find that he ate 4 cookies.

10. It can simplify $15 \times (48 + 24 + 21) + 7 \times (52 + 32 + 26)$ to find that it used 2,165 screws, washers, and pieces of wood to make the chairs.